

# THE IMPLICATIONS OF THE COLONIAL HISTORY IN DELTA PLANNING

DELTA PLANNING FOR CLIMATE CHANGE ADAPTATION IN THE MEKONG DELTA



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## SUMMARY

The threat of climate change in the Mekong Delta, Vietnam is an overarching social justice issue which has to be understood for a sustainable solution. The Mekong Delta is one of the areas affected most by climate change in the world. This threatens the livelihoods of those living there and the overall food security in the world, as Vietnam is one of the biggest rice exporters in the world. The policies made for climate change adaptation are often rooted in engineering practices. Additionally, the Mekong Delta has a history of foreign interventions. From French colonialism to an American development model to a political-economical collaboration with the Netherlands. This research investigated how these foreign interventions implicate planning for climate change adaptation, especially looking at the Mekong Delta Plan and Resolution 120. The term coloniality is used for the remaining impact of colonialism and it also encompasses the superiority of the global North after the colonial era. The Colonial Matrix of Power is used to identify coloniality and it contains the struggle for economic control, the struggle for the control of authority, the control of public sphere and the control of knowledge and subjectivity. The Mekong Delta Plan is an example of the Dutch Delta approach where it is implied that Dutch knowledge in delta planning is advanced compared to the countries where the Dutch expertise 'diffuses' to. From a historical analysis, a professional actor analysis and a policy analysis, it becomes clear that the remains of the French colonial time still influence planning for climate change adaptation today. This is visible in the way that there is still a dependency on the construction of water management infrastructure today because of the technical interventions in the past. The financial costs of maintaining this infrastructure has led to the dependency of Vietnam on international donors. The plans from multiple international actors to develop the Mekong Delta stems from the fact that they consider the delta as underused. Land is only considered valuable if it has an economic output. By implementing development plans, these international actors exert power over the economic control and the control of authority. The control of knowledge and subjectivity is seen in the promotional text from the Dutch government. This interferes with the existing relationship between the professional communities of Vietnam and the Netherlands which are based on equality. It is argued that for more socially just climate change adaptation planning, future plans have to move away from delta exploitation and delta management approaches towards delta care practices.

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## ABBREVIATIONS

CMP	Colonial Matrix of Power
JICA	Japan International Cooperation Agency
MARD	Ministry of Agriculture and regional Development
MDP	Mekong Delta Plan
MONRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
TVA	Tennessee Valley Authority

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## INTRODUCTION

The threat of climate change will affect the vulnerable in society disproportionately, the poor and marginalised who live in low-income areas are often the most vulnerable (Kaijser & Kronsell, 2014). Threats associated with climate change such as more intensive and unpredictable floods, rainfall and droughts, have a profound discriminatory effect on the marginalised and go far beyond the narrow special interests of environmental conservation advocates (Hackfort & Burchardt, 2018; Lovvorn, 2017). The issue of climate change is not only limited to environmental conservation interests, but it is also an overarching social justice issue which transcends public interest including environmental law, public health, and civil rights. This must be fully understood before moving on to a sustainable solution to the threats of climate change that will work for everyone (Lovvorn, 2017).

Vietnam is currently one of most affected countries by climate change in the world and it is anticipated by climate models that it will continue to worsen. It is predicted that extreme weather events will occur more frequently and the sea level will rise because of the predicted temperature rise (Ylipaa et al., 2019). One of the most important transboundary issues in Southeast Asia that affects Vietnam is the use and health of the rivers and the effect of climate change on it. The Mekong River is a transboundary watercourse which ends in the Mekong Delta. Its 795.000 km<sup>2</sup> basin supports the 70 million people from the beginning of the river in China, towards Myanmar, Thailand, Laos, Cambodia and ending in the Mekong Delta in Vietnam. Most of the people living in these countries depend on the river for their livelihoods (Ba et al., 2018). The waterscapes of the Mekong Delta express how humans and their environment interact with each other. All the social, economic and political processes by the societies living there or with personal interests are involved in how the water in the delta is considered or controlled (Molle et al., 2009).

Various groups of people in the Mekong Delta in Vietnam are already experiencing the effects of climate change. Sea-level rise and the irregularity of prevalence of the monsoon rains are causing a constraint for some of those living in the Mekong Delta (Ba et al., 2018; Brown et al., 2018). As one of the world's largest rice producers and exporters, the impacts of climate change threaten food security not only on a local level but also on a global level (Brown et al., 2018). In response to the potential of the delta in terms of agricultural production, and more recently, in response to the threats posed by climate change, policy makers and donors have produced a long list of policies to boost agricultural productivity and/or reduce the negative effects of weather-related risks (Hermans, 2005). Various delta master plans and plans for dam construction are included in these policies, but the envisioned results of the policies have never really been realised (Molle et al., 2009). These policies made by the professional communities are rooted in engineering practices as the water resource management was traditionally in the field of water engineers (Hermans, 2005). In this research the involvement of the professional communities and their interests are highlighted. The various professional communities from different organisations and institutions all have a common goal, and this common goal has a long-term plan and/or agenda which mandated by the organisation or institute for the actors in this communities. The actors in the communities have a contract with their employer in form of a salary to reach this mandate. This sets them apart from

farmers for example whose interests are often tied to their livelihoods (Benedikter, 2014). The professional communities come from different academic disciplines but as it is mentioned before, the engineers hold strong power in Vietnam.

The professional community perceive the delta as having 'an underused potential' and 'one world's least developed major rivers' (Molle et al., 2009). This results in the Mekong Delta being seen as a contested development region by a varied range of actors in the professional communities such as national decision-makers and international donors. The visions for its future are highly debated by these professional communities who work in and for deltas (Hirsch, 2014).

The interventions in the Mekong Delta are not a new phenomenon and have a long history. This history is not free of foreign interventions to 'master' its water flows (van Staveren et al., 2018). These interventions are a form of delta making where those whose plan for the delta imply how they understand the delta and this is visible in how they act upon and shape the delta (Umans, 2022). From French interventions during colonial rule, to the United States' overseas development model to avoid communism and the Dutch in a political-economical collaboration (van Staveren et al., 2018). During the colonial rule of France, Vietnam served as a 'laboratory' for experiments to achieve European modernity and the Mekong Delta was a place where this became visible (Raffin, 2008). Institutional arrangements in the past which resulted in built environments and new technologies have an effect on current planning. It already sets out a certain path of options available for changes or new interventions (Zegwaard et al., 2019).

In this research, the notion that current delta policies often 'fail' to achieve their envisioned outcome will be explored. Because they continue to lean on conceptualisations and hierarchies which are the remains from its colonial history, it can be expected that existing inequities are exacerbated, and it contributes to unfair and unjust development outcomes. The remaining impact of colonialism can be conceptualised as coloniality. Coloniality sustains the superiority of the Global North after the end of the colonial era (Ndlovu-Gatsheni, 2013). The agenda of Western modernity is not innocent as it disguises coloniality under the rhetoric of progress and development (Lee et al., 2015). This leads to the aim of this research to see if the colonial history in Vietnam has implications on current planning practices for climate change adaptation, as many Western countries were and are still influencing the policy making processes.

An example for this is the Dutch Delta Approach. The Netherlands is presented by its government as a safe and liveable delta where, despite the vulnerability to climate change, it is resilient to all the possible climate change scenarios because of its long history of water management. The Dutch knowledge and expertise in delta planning are being exported to other delta countries, including Vietnam, to achieve the same level of resilience and safety as in the Netherlands. This involvement is justified by the idea that other countries can learn of how the Dutch approach delta planning (Zegwaard et al., 2019). It is implied by the promotional text of Dutch delta planning that the Dutch expertise will 'diffuse' by itself from an economically, technologically, and institutionally more advanced place to a 'less well-endowed place'. An example of the promotional text is shown in Figure 1. While it is not

explicitly stated, it does imply that the Dutch knowledge in delta planning is advanced because of their advanced economic development. The diffusion narrative of the Dutch delta planning posits a hierarchy between the 'pioneers' and the 'adopters' where the initiators, the Dutch, are steering the delta planning process for the Mekong Delta (Hasan et al., 2019).



FIGURE 1 PROMOTIONAL TEXT FOR DUTCH WATER EXPERTISE DURING THE 'TOUR DE FRANCE' IN 2015. SOURCE: [WWW.MWAH.NL/WATER-YOU-THINKINGBRING-IN-THE-DUTCH](http://WWW.MWAH.NL/WATER-YOU-THINKINGBRING-IN-THE-DUTCH)

This research looks into this supposed hierarchy and explore the possible role of the colonial history of Vietnam in delta planning for climate change adaptation in the Mekong Delta. The climate change adaptation policies that are analysed in this research are the Mekong Delta Plan (MDP) and Resolution 120/NQ-CP (Resolution 120). The MDP is produced in 2013 in a strategic partnership between the Netherlands and Vietnam and it plays a key role in climate change adaptation governance. Resolution 120 is an endorsement from the Vietnamese government for the MDP (Vo et al., 2019). A comparison between these policy documents will highlight if the ideas from the Dutch are visible in the Vietnamese policy and if the context of certain ideas and concepts are translated differently.

## KNOWLEDGE GAP

Within climate change research there is a lack of integrating social sciences, especially in terms of social sciences analysis that focuses on the concepts of equality and intersectionality (Kaijser & Kronsell, 2014). The concept of coloniality is also lacking in social sciences and humanities textbooks and it is the same case for climate change science (Lee et al., 2015). The term decoloniality has not been explored yet within delta planning for climate adaptation. Although there is already a lot of research about climate change adaptation in the Mekong Delta, there is limited knowledge on how the colonial past influences the current way of delta planning for climate change adaptation. Especially when applied to the involvement of the Netherlands in the Mekong Delta.

## RESEARCH AIM AND QUESTIONS

This research aims to investigate the colonial history of Vietnam and understand how it continues to influence the way that development professionals are working in the Mekong Delta in the presents. From a brief literature review it is suspected that these colonial histories do affect delta planning in the Mekong Delta. By looking into the history of delta planning in the Mekong Delta and the involved actors from the professional communities, an analysis is made to explore the possible implications. Furthermore, it is investigated how the effect of colonial history is implicated in current planning for climate change adaptation within the Mekong Delta. This research will look into the involvement of the Netherlands in the Mekong Delta and the power contestations between the professional actors. The MDP and Resolution 120

The knowledge obtained can be used to achieve a more socially equal and sustainable outcome for those whose livelihoods depend on the delta.

The main question of this research is:

WHAT IS THE COLONIAL HISTORY OF DELTA PLANNING IN VIETNAM, AND HOW IS THIS HISTORY IMPLICATED IN HOW PROFESSIONAL COMMUNITIES PLAN FOR CLIMATE CHANGE ADAPTATION?

To answer the main research question, the following four sub-questions will be answered first:

1. What is the historical context (trend and dynamics) of delta planning in the Mekong Delta?
2. Which professional actors are involved in delta planning, which professional communities (engineers, policy makers and planner) and what is their role?
3. What strategies/projects/policies are proposed for climate change adaptation in the Mekong Delta?
4. Which connections can be seen between Vietnam's colonial history of water engineering and today's Mekong Delta planning?

#### SCIENTIFIC AND SOCIETAL RELEVANCE

The scientific relevance of this research is to contribute more knowledge about the historical context of delta planning in the Mekong Delta and if/how coloniality has influenced this. It is important to ask how scientific knowledge is used and who benefits from the implemented planning in the Mekong Delta. Different visions for the future of the Delta have different impacts on marginalised groups. The production and use of knowledge is indirectly tied to who is allowed to use what and how much of the natural environment in the delta (Molle et al., 2009). These unequal knowledge production dimensions can make it politically unviable for climate change adaptation (Ober & Sakdapolrak, 2020).

The impact of the Mekong Delta's history on water resource management has been researched before and the most prominent ones are from Biggs () and Benedikter.

While there is already research on how the colonial historical influences planning in the delta today, these research are not extended to current day policies and how it influences planning for climate change adaptation. Findings from the research

strengthen the debate on how the colonial history of water management influences planning for climate change adaptation today. Findings from this research can bring insights in how further research on delta planning and/or climate adaptation planning can look beyond the western epistemic way of thinking.

The results of the research can give more insight into how delta planning can be done differently and how that can benefit more people in the Mekong Delta. As the threats of climate change are already happening and people are already experiencing the negative consequences of it, it is important that those who have less capacity to adapt are considered. By taking coloniality into account when looking at the trends and dynamics of delta planning, the obtained knowledge will be more socially equal and sustainable to those whose livelihoods depend on the Mekong Delta.

# THEORETICAL FRAMEWORK

## CONCEPTS

The following concepts are relevant for this research. These will be explained by providing background and why it is relevant in this research.

### MAKING THE DELTA AND ITS BOUNDARIES

The Mekong Delta spans 39,700 km<sup>2</sup>. Nearly 18 million people live in the Delta and 70% of these people work in agriculture, forestry, or fisheries. Almost two-thirds of the delta is devoted to agricultural purposes (Q. H. Nguyen et al., 2020). The Mekong Delta can be divided into different regions by its hydrology (Figure 2) and soil chemistry (Figure 3). The alluvial regions along the major channels of the Mekong River are the most fertile and oldest regions. This region contains most of the larger cities in the delta. The coastal zone on the east is subjected to saltwater intrusion. The Plain of Reeds, Ca Mau Peninsula, Trans-Bassac Depressions and Long Xuyen Quadrangle are the four major basins with acid sulphate soil. These areas are vulnerable to (annual monsoon) flooding and sometimes saltwater intrusion (Biggs et al., 2009).

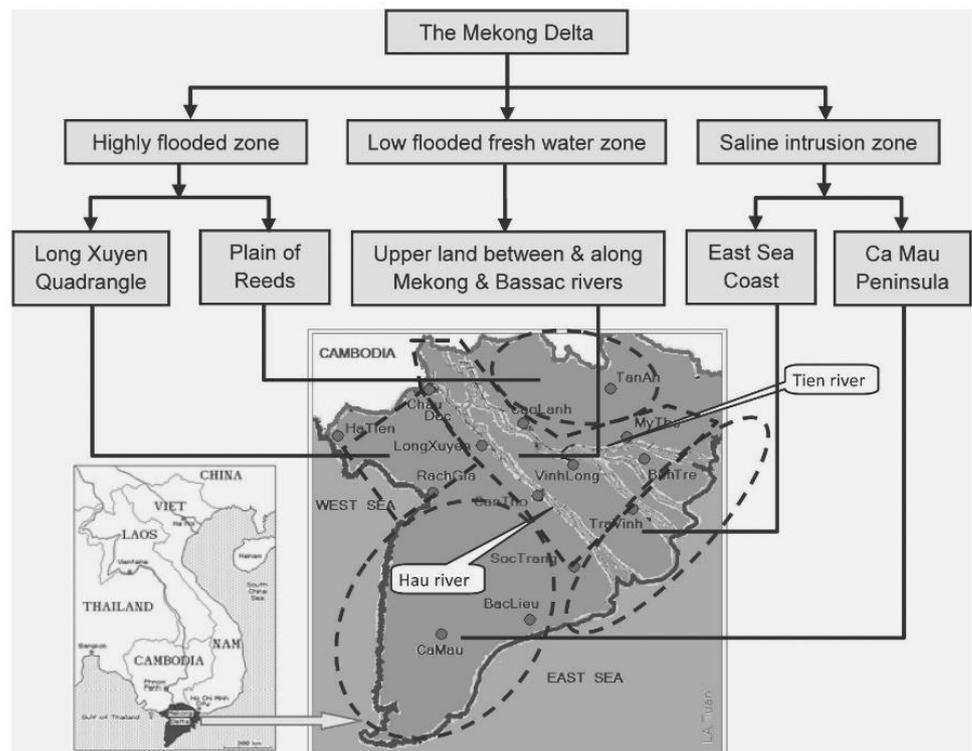


FIGURE 2 MEKONG DELTA WATER RESOURCE ZONES. SOURCE: HOANG ET AL. (2015)

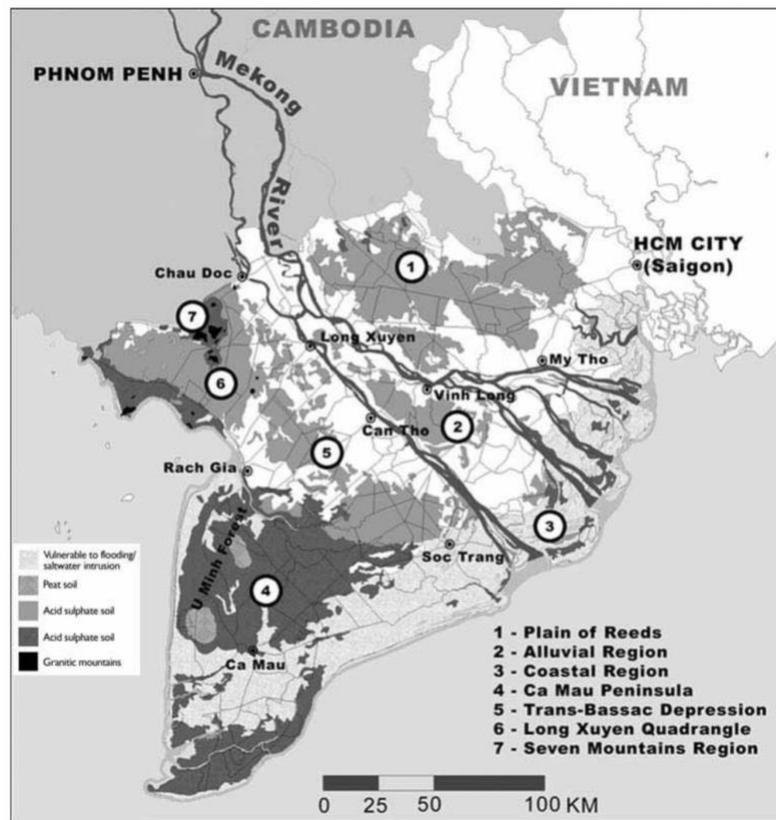


FIGURE 3 MEKONG DELTA REGIONS AND SOIL CHEMSITRY. SOURCE: BIGGS ET AL. (2009)

Deltas are defined as flat plains where the river splits and the Mekong is both a river and a watershed (Bakker, 1999; Seijger et al., 2019). The Mekong delta is a human made landscape which is clearly defined by its physical geography which is surrounded by coastlines and waterways (Biggs et al., 2009). This made landscape and its interrelationships with physical, climatic, biotic and human activities are also called a waterscape (Molle et al., 2009). *‘Waterscapes are an expression of the interaction between humans and their environment and encompass all of the social, economic and political processes through which water in nature is conceived of, and manipulated by societies.’* (Molle et al., 2009, p. 2). Water as a resource has always has a socioeconomic value and that makes it a political and cultural resource (Benedikter, 2014). Similarly, deltas have been conceived as a territorial space with an abundance of resources (Umans, 2022). It is the resource that defines the boundaries of a region that will in turn exploit its potential (Bakker, 1999). How the delta is understood, acted upon and shaped is a from a delta making. Plans that are made to act upon and shape the delta, are a form of delta planning (Umans, 2022).The water in the Delta has a socio-economic value and water as a resource has a history of being highly political (Benedikter, 2014). Delta exploitation is a way of delta making where colonisation, cultivation and resource extraction are encouraged in order to achieve development (Umans, 2022).The boundaries of the Mekong Delta have inspired great plans of ambitious engineering (Biggs et al., 2009).

*“The Vietnamese Mekong Delta is one of the world’s most intensively irrigated areas”* (Benedikter, 2014, p. 5)

In order to manage water resources for agriculture in the Mekong Delta, water control infrastructures were constructed over the years, and they have shaped the land. The hydrological regimes have changed, and biodiversity and ecosystem functioning have been negatively affected (Vo et al., 2019). These negative effects have made professionals reconsider how they proceed in delta making which resulted in the adoption of delta management. In these practices the resources are considered to be limited which means that there is a need to manage them. The delta is perceived as a socio-eco-technological system (Umans, 2022). It was often assumed by master plans for delta making that the natural and social environment of the delta are predictable. These assumptions have been contradicted by social upheaval and natural hazards which led to discrepancies in freshwater availability and disastrous floods. The threats that came out of these social upheaval and natural hazards both disturb but also have justified some water resource development programs (Biggs et al., 2009). Together with the fact that the Mekong Delta has been perceived as underdeveloped by the international communities (Molle et al., 2009). This depiction of the Mekong Delta as underutilised and uncontrolled portrays it as a creation of uses and users, but it does not take uses of those who live there and rely on the delta for their livelihoods (Bakker, 1999). Many local people perceive the Mekong Delta as a living body, and they have developed an intimate relation of mutual caretaking. This way of delta making is also called delta care where the liveliness of the delta is respected. By taking care of the wellbeing of the delta, the wellbeing of the caretakers is also increased (Umans, 2022). *'The river is thus more heavily utilised than the language of underdevelopment implies'* (Bakker, 1999, p. 220).

<b>The main characteristics of the three delta-making practices</b>				
<b>Practice</b>	<b>Deltaic nature</b>	<b>Human nature</b>	<b>Human role</b>	<b>Power</b>
Exploitation	A space	Being a resource	Master	Power over
Management	A system	Being a rational	Manager	Power to
Caretaking	A living body	Being affective	Caretaker	Power with

**TABLE 1 THE CHARACTERISTICS OF DELTA MAKING PRACTICES. SOURCE: UMANS (2022)**

#### PLANNING FOR CLIMATE CHANGE ADAPTATION AND ITS CHALLENGES

Within the Mekong Delta, the negative impacts of climate change are already affecting those who live there, and it will continue to worsen according to scientific predictions. Extreme weather events such as storms and floods are happening with an increased frequency (Ylipaa et al., 2019) and this will only be exacerbated by the temperature increase and sea-level rise (Brown et al., 2018). It is estimated that with a sea-level rise of 1 metre the Mekong Delta will lose 12.3 percent of its cultivated land (Biggs et al., 2009). The rice production in the Mekong Delta is dependent on the substantial inflow of water and sediments, but it also must be protected against unexpected floods (Brown et al., 2018). The waterways are kept free of sediments and enormous investments made to achieve this for irrigation, flood control and transportation. However, these sediments contain nutrients which are important for agricultural productivity and many farmers are dependent on it for soil fertility (Biggs et al., 2009). A lack of flooding will come with negative impacts for the natural environment and agricultural productivity. Seasonal flooding of the Mekong Delta has environmental benefits, but the changing onset and duration of it can constraint rice production opportunities (Brown et al., 2018).

Extreme flooding causes urban damage and has a negative impact on the livelihoods of those who live there (van Staveren et al., 2018).

On the other hand, water management in the Mekong Delta also focuses on water scarcity with the declining quality in water because of salinity water intrusion (Brown et al., 2018; Loc et al., 2021). The framing of needing to manage water wisely and maximise the productivity of water results in the ‘low value’ uses of water becoming an ‘obstacle to development’ (Bakker, 1999). In recent years there have been more droughts. In 2016 the Mekong Delta suffered from severe droughts and saline intrusion (Minkman et al., 2022). Planning in the Mekong Delta has historically focussed and continues to focus on agricultural development and therefore climate change adaptation is often only approached from an agricultural need (Ober & Sakdapolrak, 2020). Climate change adaptation in Vietnam is often focussed on technical solutions for adaptation and the social aspects are ignored (Ylipaa et al., 2019). The management of water resources has historically been overshadowed by technical interventions closely tied to engineering practices (Benedikter, 2014). The disregard of the socio-political dimension is also visible in the current plans for climate change adaptation. One of the climate change adaptation plans is controlled flooding in the Mekong Delta, as this is seen as a ‘hazard to control’ (Bakker, 1999; van Staveren et al., 2018). With the dominant paradigm of flood prevention, depicting floods as environmentally valuable has caused policy debates about the right flood management strategy for the Mekong Delta. Within these plans it is decided to which extent flooding is harmful or beneficial for the delta as a hydro-agricultural machine (van Staveren et al., 2018). This contradicts the fact that floods are the basis of many of the basin’s agricultural productivity (Bakker, 1999). Controlled flooding initiatives can result in social tensions, as deciding which areas to flood results in choosing who will be affected by flooding. This makes delta planning a political process (van Staveren et al., 2018).

The barriers of climate change adaptation to overcome are often reduced into techno-managerial categories such as limited information, knowledge, and expertise (Ober & Sakdapolrak, 2020). Table 2 contains the indicators for techno-managerial barriers. The explanation of origin of these barriers are often left aside when looking into the solutions. How these barriers are defined is often steeped in normative judgements from policy makers which lacks the possible influences across time and space which are not explored yet (Ober & Sakdapolrak, 2020). These normative judgements often have roots in colonial histories (Ndlovu-Gatsheni, 2013). Present-day conflicts are informed by the historical disconnect between large-scale state projects and bottom-up actions on an individual scale (Biggs et al., 2009). Climate change adaptation policies are a dynamic result of diverse actors, structures, and actions. Their contested and changing input occurs across different timelines, spaces, and scales. It is important to ask who determines what constitutes climate change adaptation and who determines what action within climate change adaptation means (Ober & Sakdapolrak, 2020).

Techno-managerial barriers to CCA		
Category	Type of barrier	Example
Obvious	Financial	Lack of resources
	Technical	Lack of knowledge

		Uncertainty
<b>Hidden</b>	Socio-cultural	The need for change of thinking Lack of motivation and willingness to act Lack of awareness and communication
	Political-economic	Prioritisation Lack of timescales Institutional fragmentation

**TABLE 2 INDICATORS OF TECHNO-MANAGERIAL BARRIERS TO CCA. SOURCE: OBER & SALDAPOLRAK (2020)**

POLICY TRANSLATIONS AND THE POWER CONTESTATIONS BETWEEN THE PROFESSIONAL COMMUNITIES

The question of who determines what action within climate change adaptation means transcends to the wider issues in planning in the Mekong Delta and the actors involved. In a globalised world policy makers often look to learn from foreign experiences. They look for policy knowledge outside of their political systems. The movement of policy ideas from one place to the other is called policy transfer (Duong, 2022; Hasan et al., 2022; Laeni et al., 2021). Various degrees of policy transfer are possible, from direct replication to taking inspiration. In the process of policy transfer there is a possibility of convergence and divergence in certain aspects in the outcomes (Duong, 2022). Delta planning for climate change adaptation in the Mekong Delta is heavily influenced by Dutch delta planning knowledge as the Dutch and Vietnamese government have a strategic partnership (Zegwaard et al., 2019). The Dutch government has promoted its water expertise for sustainable delta management as the Dutch Delta Approach. It is claimed by the Dutch government that the expertise stems from experience and knowledge obtained in its own water history. The version is the Dutch water history is carefully made for the promotion of its experience and knowledge. This promotional text leaves out the fact that Vietnam also as a history with water and that they are not unbeknownst to the functioning of the Mekong Delta (Hasan et al., 2019).

Policy mobility or knowledge transfer refers to how policy ideas move from one place to another (Hasan et al., 2019). A form of policy mobility is policy translation. The process of Dutch knowledge transforming into Vietnamese policies is referred to as translation where not all elements from the 'sender' are preserved and some elements are modified to fit into the norms of the 'receiver' (Duong, 2022; Zegwaard et al., 2019). During policy translation new policies are made from combining different policy models from different sources. This process emphasises the actors involved and the context, as it depends on the power relationships between the actors (Duong, 2022). It is not linear, apolitical and does not go without tensions and contestations in governance processes. How ideas are translated during the translation process depends on the actors and their particular interests (Zegwaard et al., 2019). Laeni et al. (2021) emphasises that it is important to ensure that certain policy concepts and ideas are not 'misused' when these policy concepts and ideas which are adopted into a significantly different context. When policy is translated, it is important to pay attention to the origin of the policy concepts and ideas (Laeni et al., 2021). By referring to policy transfer as a policy diffusion, what the Dutch promotional text implies, it is implied that there is a hierarchy in knowledge. By prioritising the water knowledge of the Dutch, it does not

acknowledge the experiences and knowledge of the Vietnamese (Hasan et al., 2019).

This research focusses on professional actors from the professional community. These are actors whose expertise is used in their work on delta. This is also called the community of practice where a group of people with the same interest, in this case the Mekong Delta, make a collective effort in development in delta. They are committed to this cause, this case the commitment is mandated by their work, and they interact with each other. They often present the agenda of their organisation (Wenger, 2011). As described in the introduction, professional actors from the professional community differs from other actors such as farmers for example because of the mandate to reach the goal from their organisation (Benedikter, 2014).

Delta-making in the Mekong delta has been dominated by engineers (Umans, 2022). The demand for engineers in the Mekong Delta has always been high within a multitude of hydraulic bureaucratic organisations. These organisations wanted engineers for their expertise in multiple disciplines. This varied from hydrology, agriculture, landscape, geology to other related disciplines. Only towards the new millennium the paradigm from engineer dominated delta making to a more interdisciplinary way of water management (Benedikter, 2014). The realm of water resource management can be divided into three dimensions: the technical/physical dimension, the organisational/managerial dimensions and the socioeconomic/regulatory dimension. The group of hydraulic engineers are a cross-cutting category in multiple communities, from state bureaus to planning institutions to agencies and engineering companies.

Planning for climate change adaptation in the Mekong Delta is a complex process where a diversity of actors from different domains are involved. It touches a multiple of policy domains, each having different agendas (Vo et al., 2019). The power to have an influence is not equal and their involvement in delta planning is also not equal (Kik et al., 2021). The power of each actor is interwoven with their historical, social, political, and economic positions in these structures. It is also not possible for a certain actor to know everything which is relevant within the objective. This results in a policy making process where everyone has to compromise, which often leads to a new policy that is only slightly different from the old one (Hermans, 2005). It is important to identify what the priorities of the actors are, the importance of the actors' priority and what their degree of power is (Kik et al., 2021). The perceptions of actors can be changed through education or propaganda activities. An actor with more power has the ability to influence other actors by legislation, financial incentives and social pressure (Hermans, 2005; Kik et al., 2021). It is important to understand the politics around the knowledge and how it is framed (Zegwaard et al., 2019). Rules give actors control over resources and in turn these resources can be used to change rules again (Hermans, 2005). Traditionally, the field of water resource management was dominated by water engineers. In recent years it has become clear that just technical solutions are not sufficient for a successful water policy development. By only focusing on technical solutions, it is likely that interests of other actors are neglected (Hermans, 2005).

When the interests of other actors are neglected, they might disturb the implementation stage of the policy (Kik et al., 2021).

The following analysis framework in Table 3 is used. It is adapted from Kik et al. (2021). Within the literature the term ‘actors’ and ‘stakeholder’ are often used interchangeably. It is argued that using the term ‘actor’ is more suitable, as not everyone involved holds a clear stake. By only identifying the priority of the actors, the importance of that actors’ priority within delta planning is not clear yet. An integrated actor analysis consists of inventory of the actors, assessment of their priorities, and the assessment of their degree of power (Kik et al., 2021).

<b>Professional actor analysis</b>	
Actor inventory	Selection of actors on literature and policies
	Describe the position of the actors
	Grouping actors based on their position
	Validate the selection of actors by experts
	Include actors mentioned by other
Actors’ priorities	Environmental
	Social
	Economic
Actors’ power interest	Power: the influence actors can have on each other by legislation, financial incentives, and social pressure
	Interest: the degree of concern the actors has and their passive/active involvement

**TABLE 3 ACTOR ANALYSIS. SOURCE: KIK ET AL. (2021)**

#### THE REMAINS OF THE COLONIAL HISTORY – COLONIALITY

Although formal colonial domination is over, it is argued by coloniality scholars that its effect remains. Not only in the colonised societies but also in the mindset of the Western culture. While colonised countries around the world decolonised, coloniality did not disappear (Mpfu, 2017) . The concept of coloniality does not equal colonialism but it is the underlying logic of it (Lee et al., 2015; Mignolo, 2021). Coloniality describes a global phenomenon which has a variety of manifestations, but the main characteristics of coloniality are not lost (Tlostanova & Mignolo, 2009). In the Global South, coloniality manifests in a way of thinking, feeling, and being associated with European global domination after the formal end of colonial rule (Adams et al., 2018; Maldonado-Torres, 2011). The relationship with exploitation, domination and the superiority of the Global North continues to be sustained (Ndlovu-Gatsheni, 2013).

Modernity hides coloniality and both concepts are dependent on each other. The concept ‘development’ is a companion of modernity and it disguises the agenda of modernity (Lee et al., 2015; Mignolo, 2021; Paradies, 2020; Tlostanova & Mignolo, 2009). Until about the 1980, development studies has been of field which has remained deeply interpellated by its Euro-American modernist and ‘civilising missions’ genealogy (Ndlovu-Gatsheni, 2013). Development comes with the irrational belief that growth will bring happiness for everyone (Lee et al., 2015). Increased growth and consumption are viewed as a way to achieve equality, largely ignoring the ecological implications of increased resource use. The rhetoric of progress, happiness and development are used to cover up authority. Solutions to

environmental problems often lacks a deeper understanding of social relations and power structures (Kaijser & Kronsell, 2014; Tlostanova & Mignolo, 2009). While coloniality has roots in capitalism, it goes further than just capitalism and cannot be solely understood in the economic sphere. Yet coloniality will continue to remain with the desire to accumulate capital (Tlostanova & Mignolo, 2009).

Western or European colonialism was expressed differently in different parts around the world. This means that the expression of coloniality also differs per region in the world and even per country (Porr & Matthews, 2017). Coloniality is expressed in different spheres in life, and it is done through the colonial matrix of power (CMP). The CMP operates in the following four interconnected spheres of life: economic control, control of authority, control of public sphere and control of knowledge and subjectivity, which each contains its own struggles (Lee et al., 2015; Tlostanova & Mignolo, 2009). The CMP is an instrument to implement the coloniality of power and the field of development discourse is not free of it. The first step in decolonial thinking is the concept of the colonial matrix of power and instrumentalising coloniality within it (Ndlovu-Gatsheni, 2013; Tlostanova & Mignolo, 2009). Table 4 provides an overview of the indicator of the CMP. Decolonial thinking is about de-linking from the remaining imperial/colonial organisation of society and the modern Western epistemology. It asks who produced knowledge, why (why is this knowledge needed), when, how (the method) and what for (who will benefit from it). It should be acknowledged that the rhetoric of modernity, progress and development cannot exist without coloniality (Lee et al., 2015; Tlostanova & Mignolo, 2009; Woons & Weier, 2017). Table 5 provides an overview of the language used for this rhetoric and how it can be identified. Coloniality and the CMP are inherently a decolonial concept as acknowledging them are the first steps in decolonial thinking. Understanding these concepts allows for thinking outside of the borders of modernity, thus coloniality (Mignolo, 2021; Woons & Weier, 2017).

In the end, the goal of decoloniality is about apprehending how the colonial past was and continues to be harmful and to strive for a future free of it (Paradies, 2020). Coloniality sustains the superiority of knowledge produced by the Global North and results in the erasure of knowledge by the local communities. This leads to an increased vulnerability to the threats of climate change and less capacity for climate change adaptation (Kaijser & Kronsell, 2014; Wijsman & Feagan, 2019).

<b>Colonial Matrix of Power</b>	
<b>Sphere of operation and struggle</b>	<b>Indicators</b>
The struggle for the economic control	Appropriation of land and natural resources
	Exploitation of labour
	Financial control of indebted countries.
The struggle for the control of authority	Setting up political organisations
	Different forms of governmental, financial, and legal systems
	Installation of military bases
The control of the public sphere	Enforcement of the nuclear family

	Enforcement of normative sexuality Naturalisation of gender roles in relation to the system of authority and principles regulating economic practices
	Dual 'natural' gender norms
The control of knowledge and subjectivity	Through education
	Colonising existing knowledge
	The concept of the modern and Western subject

TABLE 4 THE COLONIAL MATRIX OF POWER AND ITS INDICATIONS. SOURCE: TLOSTANOVA & MIGNOLO (2009)

Rhetoric of progress – language indicators	
Non-Western world	Western world
Traditional	Modern
Primitive	Civilised
Irrational	Rational
Magic-mythic	Scientific
Otherness	Sameness
Global South	Euro-American
Underdeveloped	Developed

TABLE 5 COLONIALITY LANGUAGE INDICATORS

#### VULNERABILITY AND ITS RELATION TO COLONIALITY

Vulnerability to climate change threats is defined as the lack to build an adaptive capacity. It is dependent on complex interrelations between multiple factors, and it is not isolated from power relations (Hackfort & Burchardt, 2018). Within climate change adaptation literature, an institutionalist notion is followed where the power relations and political struggles that contribute to vulnerability are widely ignored. This bias within adaptation research and policy result in social inequalities reinforced on an intersectional level (Hackfort & Burchardt, 2018). The term vulnerability is often framed in a simplistic way by policy makers. This is not because they lack the understanding of imagination to see this as a diverse group, but because the way vulnerability is framed is deeply rooted in postcolonial histories (Ober & Sakdapolrak, 2020).

When defining vulnerability the parameters that are traditionally used to measure vulnerability are age, class and gender (Ylipaa et al., 2019). Class and economic status is often favoured as factors over gender (Hackfort & Burchardt, 2018) but the intersecting vulnerabilities must be considered for the compatibility of plans within the local contexts and to make them applicable in practice (Ylipaa et al., 2019). To contextualise vulnerability, it is important to use the concept of intersectionality (Wijsman & Feagan, 2019). Intersectionality is the interaction of power between multiple factors including age, class and gender and it helps to recognise the unequal experiences within the threat of climate change (A.E. Kings, 2017; Lovvorn, 2017). The marginalised and the poor are not a homogenous group. Rural women in the global South are the most disadvantaged group in the world as they usually lack the necessary resources to cope with the effects of climate change. The social role of women as carers results in them being more affected by environmental degradation. They are also less likely to be involved in decision-making processes and tend to be underrepresented in decision-making (Kaijser & Kronsell, 2014;

Lovvorn, 2017; MacGregor, 2009). It is predicted that those who are economically disadvantaged in the coastal areas are most likely to be affected by climate change. In scientific literature and in delta planning documents, their capacity to adapt is often depicted as lacking or very limited where a cycle of vulnerability and poverty are perpetuated. The challenges to adapt to climate change increase with poverty, which leads to them being marginalised even further (Lovvorn, 2017). The local context and the diverse adaptive capacities of those in the Mekong Delta and the intersection of vulnerabilities have to be considered (Ylipaa et al., 2019). The dominant social order that produces this vulnerability must be exposed and challenged (Wijsman & Feagan, 2019). The lack of analytical attention to causes of marginalisation and normalising vulnerability preserves the dominant social order (Wijsman & Feagan, 2019).

#### SOCIAL JUSTICE

Environmental conservation issues in Southeast Asia are inseparably linked to justice and inequality. The meaning of the environment has often been conflated with natural resources which are to be exploited. Only a privileged few enjoy the benefits of this exploitation while the less powerful are negatively affected. These environmental justice issues are framed by coloniality where the environment and poor are 'sacrificed' for commercial growth and industrial modernity in a long-term vision (Ba et al., 2018). Climate change is often presented as a future event while most people, especially those in the global South, are already experiencing the consequences of it (MacGregor, 2009). Those who are feeling the effects of climate change contribute the least to it (Lovvorn, 2017). The disproportional impacts and burden of climate change can be acknowledged with intersectionality (A.E. Kings, 2017; Wijsman & Feagan, 2019).

The majority of climate adaptation literature deems that the conditions needed for adaptive capacities are economic rights, social chances, and forms of capital. It also conceptualises the politics around climate change adaptation as rational choice agents where the power relations and political struggles are ignored (Hackfort & Burchardt, 2018). By ignoring the historical and structural contexts of certain places, it preserves the political-economic status quo. The structural causes of socio-economic inequalities lacking analytical attention and vulnerability are normalised. It is needed to emphasise the asymmetric power dynamics and conflict of natural resources to avoid the exacerbation of social-inequalities (Wijsman & Feagan, 2019). Taking the colonial history of Vietnam into account is important to assess how the power contestations might affect delta planning for climate change adaptation. Decolonial thinking is a tool to think outside of the norms that are regarded as naturalised. Norms reflect power and privilege which are reproduced by everyday behaviour and practices. This is why it is important to have a deeper understanding of power relations for climate change solutions (Lovvorn, 2017). Decolonial thinking is a tool to address inequality and injustice (Mpofu, 2017). Understanding how colonial history has an impact on current power contestations can contribute to a more socially just delta planning with a sustainable outcome.

#### CONCEPTUAL FRAMEWORK

The conceptual framework in Figure 4 shows how the concepts relate to each other and why these are relevant in this research.



Figure 4 Conceptual framework

# METHODOLOGICAL FRAMEWORK

## RESEARCH METHODS

The following methods were used to answer the main research question and the sub-questions. The different methods used are explained for the different stages of the research.

### PHASE 1: FRAMING AND PRELIMINARY RESEARCH

This phase is the literature review. In this phase the theory of several concepts was explained and conceptualised. From literature review a professional actor analysis was made. The actor analysis framework from Kik et al. (2021) was adapted to fit into this research. With an extensive literature review the impact of colonial history was conceptualised and a framework was made to identify it. The language and discourse that are used to imply coloniality in practice were identified in scientific literature. The colonial matrix of power from Tlostanova & Mignolo (2009) is used to identify coloniality. From literature research a language indicator for the rethoric of progress was made using the indicators found in literature about coloniality.

### PHASE 2: DATA GATHERING

This phase is divided into three different methods of data gathering: a document research, interviews with professional actors and a policy analysis. These methods are further elaborated below.

#### DOCUMENT RESEARCH

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The broad history of delta planning in the Mekong Delta was constructed in this phase. A chronological timeline was made using academic literature research and document research. Maps from archives were used to visualise how the Mekong Delta was perceived from multiple perspectives.

#### INTERVIEWS WITH PROFESSIONAL ACTORS

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Semi-structured interviews were held with actors from the professional communities in how they perceive the trends and dynamics in delta planning and how they perceive the Dutch involvement. While some questions were prepared, most of the time it was a natural conversation. Actors in Table 6 were approached by email and a date was set to do the interview online. They were informed about the subject of the interview so they could prepare. A semi-structured set of questions was prepared before the interview and afterwards the interviews were transcribed. The interview guide is added in appendix 1.

Interviewees		
Ref	Description	Place
VN1	Researcher	Can Tho
VN2	Official	Hanoi
NL1	Official	Hanoi
NL2	Researcher	Delft

TABLE 6 LIST OF INTERVIEWEES

#### POLICY ANALYSIS

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First off it was decided which plans or policies are used in the analysis. From explorative research it was clear that the Mekong Delta Plan (MDP) is very central in planning for climate change adaptation. From interviews and literature research it was confirmed that the MDP is the overarching plan and that Resolution 120/NQ-CP is the confirmation by the Vietnamese government for the implementation of the MDP.

### PHASE 3: ANALYSIS

In this phase a connection was made with Vietnam's colonial history, the history of delta planning and today's planning for climate adaptation in the Mekong Delta. Planning for climate change adaptation in the Mekong Delta was looked at from an 'assemblage' approach. Different sites of analysis were picked to see many angles. This allows the investigation of coloniality in relation to the environment outside the established structures. This makes it possible to look beyond the traditional binaries (Ober & Sakdapolrak, 2020) which are used in the language to describe rhetoric of progress, described in table 5.

First off, a professional actor analysis was done to show who is involved in delta planning in the Mekong Delta and the relationship between these actors. This analysis is done in three steps. In the first step in the actor inventory, all the actors from the different professional communities were identified. The priorities and their power-interest were highlighted. This was done by looking into the mandates of these communities. The historic importance of the various communities were investigated as it influences their power today. In this part, expert interviews and documents were used to obtain data. The relationships between the actors were visualised in an actor matrix.

For this research the MDP and Resolution 120 are analysed and compared to each other. First it will be analysed on the techno-managerial barrier to climate change adaptation (see table 2), as these barriers are normative judgements which stems from colonial histories (Ober & Sakdapolrak, 2020). With the language indicator for the rhetoric of progress (see table 5) these policy documents were analysed on if it contains ideas or interests that are in line with this rhetoric. Then the two documents are compared to see how much of the ideas of the MDP remains in Resolution 120. This was done in the order from the sections in Resolution 120. This was compared to a section in the MDP which had the most overlap. The outcome from this policy analysis will be used for the overall analysis.

Lastly, actor analysis and the policy analysis were placed in the Colonial Matrix of Power. The results were divided into the four spheres where the CMP operates in. Comparing these results to the history of the Mekong Delta obtained from the document research can show if this history is implicated in planning for climate change adaptation.

## RESEARCH FRAMEWORK

The following research framework in Figure 5 is a visualisation of all the phases described in the research methods and shows which sub-questions are answered in which phase.

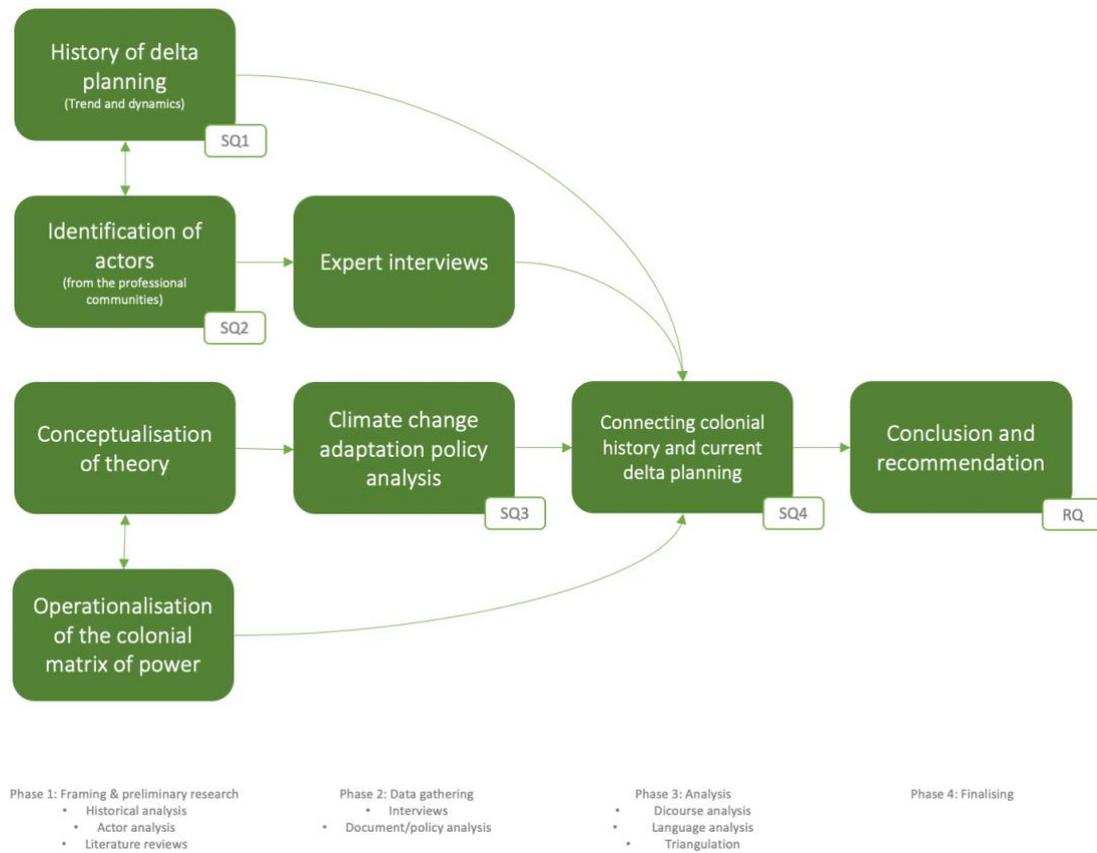


Figure 5 Research framework

## RELIABILITY AND LIMITATIONS

The biggest issue with the reliability of the results obtained is that this research was done remotely. Traveling to location was not possible at that time because of COVID-19, so data collection was dependent on the online availability of data and interviewees. There was a possibility that not all data needed was available online. The language barrier was another barrier in obtaining data. For all the participants from Vietnam, English is not their first language and nuances can be lost in translation. This is the same for the interviews done in Dutch, the translation of the researcher might have missed some nuances to their answers.

## ETHICS

This research adheres to ethical standards. The most important one is the neutrality of the researcher. It was always assumed that coloniality does not impact climate adaptation planning until proven. Efforts were done to do this research from an as neutral standpoint as possible, and this was made clear when the interviews were done with the experts. The questions could not explicitly imply that coloniality might have an impact on delta planning in the Mekong Delta. All answers given were considered even if it did not fit into the narrative of this research.

Furthermore, the privacy, dignity and safety of all participants was ensured. Before interviews started, the researcher asked the participants if they consent to being recorded. All participation was voluntary, informed and consented to, the transcripts were anonymised, and all data was kept safe and treated with care. The participants were always able to terminate their participation. For privacy reasons, the participants requested to remain anonymous and only to be named by their profession so they cannot be traced.

## POSITIONALITY

Despite that the researcher must remain neutral, the positionality of the researcher might have influenced the results. This research contains the experiences of the participants in the field, and this always remains subjective. The researcher has a background in Environmental Studies and Sustainable Development from a Dutch university while their own background is Vietnamese (specifically from the Mekong Delta). This positionality comes with certain biases. While this research is only investigating if coloniality has an implication in planning for climate change adaptation for Vietnam, the researcher already has an idea that there is an implication and is actively looking for it.

# HISTORICAL ANALYSIS OF DELTA PLANNING

## THE GREAT MARCH SOUTH

The Mekong Delta became part of Vietnam when the Vietnamese marched south from the Red River Delta in the North around the 1800s, expanded their boundaries and conquered the land that was part of the Khmer empire and a smaller part of the Champa kingdom. These borders are still part of what is now modern-day Vietnam (H. H. Nguyen et al., 2016). The intensive settlement of the Vietnamese caused the displacement of the Cham and Khmer (Vormoor, 2010). This was during the Nguyen dynasty, and this marks the start of a period called 'opening up the delta'. This term is simultaneously used for the water engineering practices by the French during their colonial time in Vietnam (1862-1954) (Vormoor, 2010). During the Nguyen dynasty between 1816 and 1836, a program was launched to expand the settlements in the Mekong Delta where canals were constructed and land suitable for rice production was set (H. H. Nguyen et al., 2016). With land reclamation in the Mekong Delta by the Vietnamese empire came their expanded control in this area. The area which was populated by the Vietnamese was still very small compared to today's area that is populated and cultivated for rice (Boomgaard & Henley, 2004). As the map in Figure 6 shows, the delta was not a part of Vietnam yet. The geographical knowledge from the French of this time was still limited. On the map the Mekong River splits in three rivers at the end.

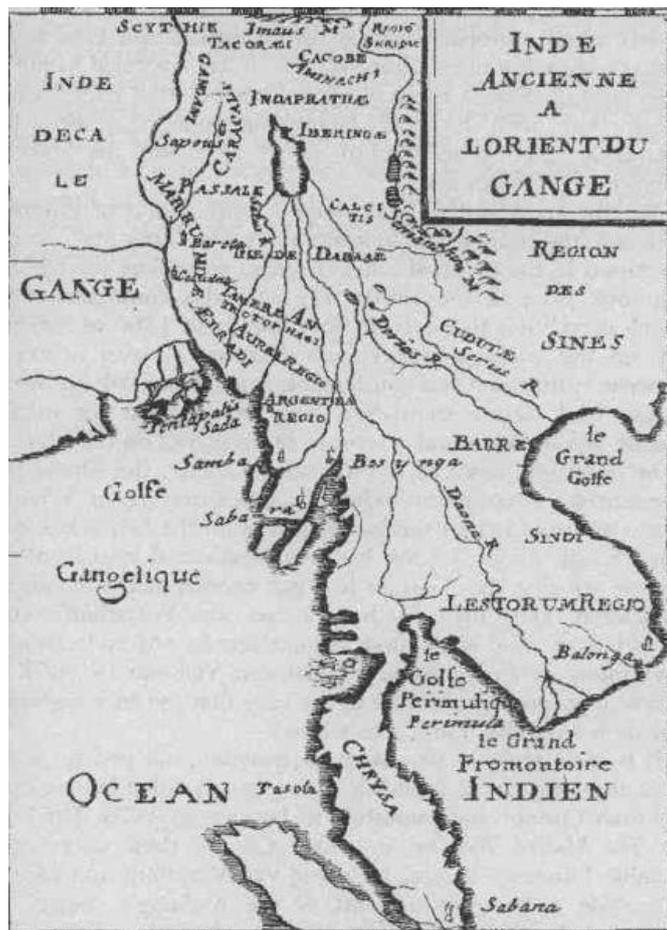
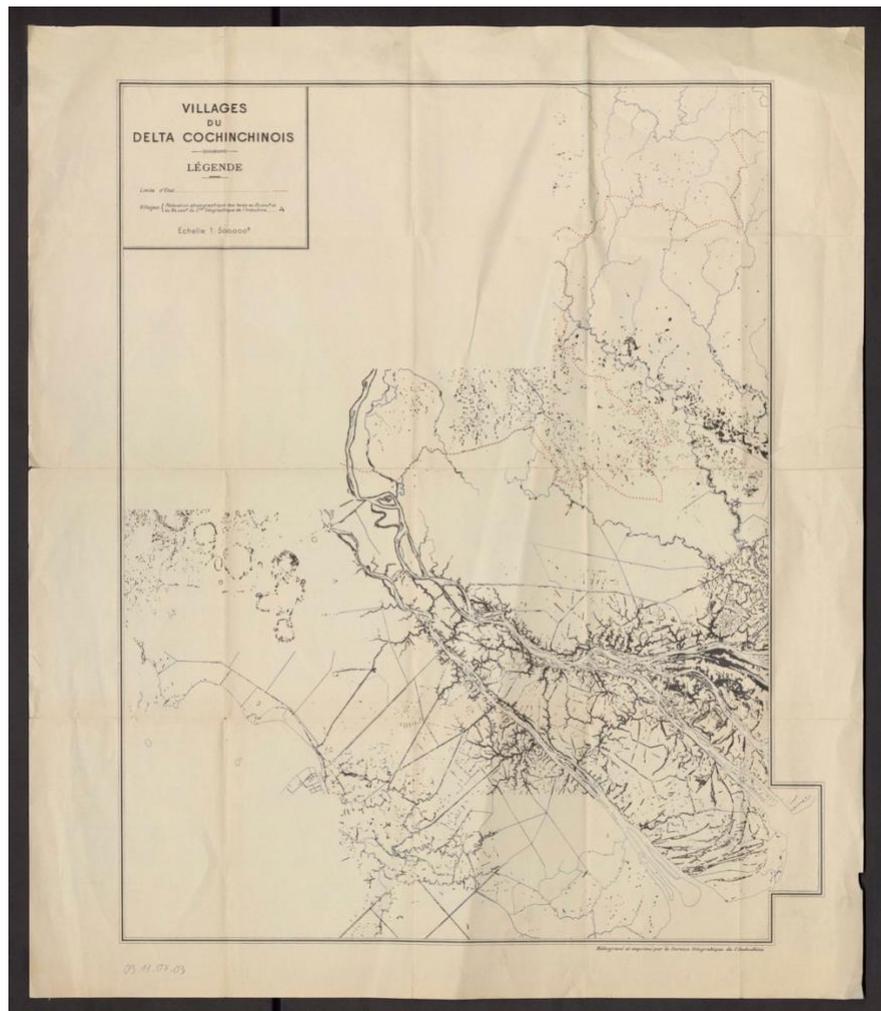


FIGURE 6 MAP OF THE MEKONG DELTA FROM THE FRENCH IN 1715. SOURCES: OSBORNE (2000)

## FRENCH COLONISATION

The French influence in the Mekong Delta began when their navy conquered the Delta in 1858 which eventually led to them achieving full political control in 1867 (Biggs et al., 2012). The boundaries of French territorial possessions were defined in the term 'Indochina'. It encompassed current day Vietnam, Cambodia and Lao DRP which were to some degree a colonial construct. These geopolitical boundaries by the French resulted in implications for the flow of resources (Bakker, 1999). Their mission in the Mekong Delta was called 'la mission civilstrarice' which was a civilising mission (H. H. Nguyen et al., 2016). The French administration saw a potential to take advantage of the Mekong Delta area by developing rice production. Investments for the development of infrastructure was made to increase the rice production (Boomgaard & Henley, 2004). Land was opened for settlements and agriculture, and water was drained. This resulted in the expansion of canals, navigation networks and an increase of rice production. The purpose of this mission was to exploit the land and generate revenue for the French (H. H. Nguyen et al., 2016). In 1875 a commission was founded by the French governor for the constructions of canals in the delta to exploit it. While this is often referred to as 'opening-up the delta', the French authorities were more concerned with strategic and military concerns of settlements and transport. Water resource management for agriculture (irrigation, drainage and flood protection) was done by individual farmers. This was done in the form of adaptive farming systems in small-scale constructions on their farms (Vormoor, 2010). The map in Figure 7 shows one of the earlier maps of the Mekong Delta by the French. In this map the canal network is visible.

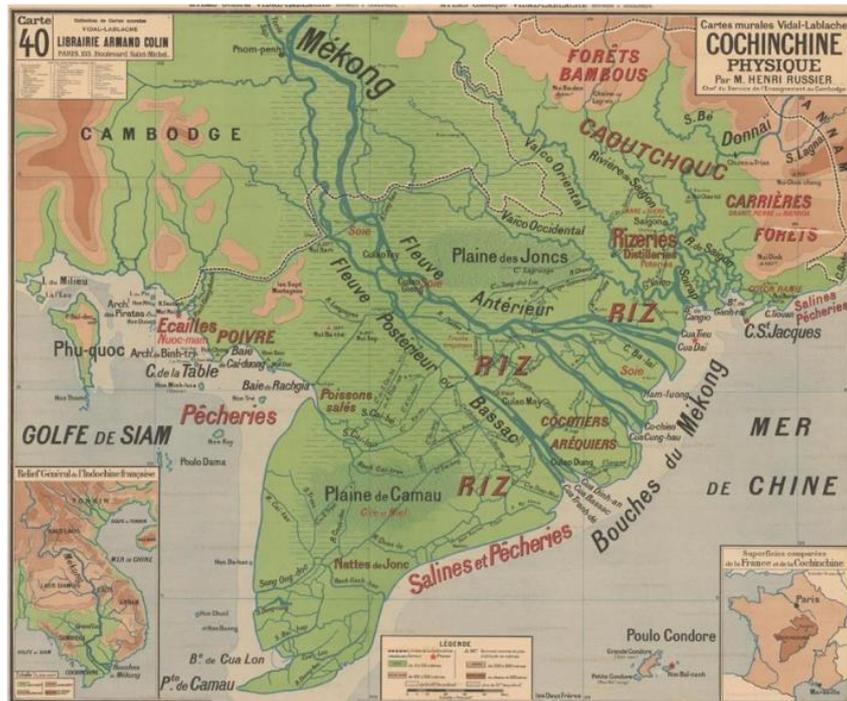


**FIGURE 7 FRENCH MAP OF THE MEKONG DELTA. DATE: 1930s. SOURCE: [HTTPS://1886.U-BORDEAUX-MONTAIGNE.FR/S/1886/ITEM/218939#?C=&M=&S=&CV=&XYWH=-2045%2C0%2C11264%2C8344](https://1886.u-bordeaux-montaigne.fr/s/1886/item/218939#c=&m=&s=&cv=&xywh=-2045%2C0%2C11264%2C8344)**

From early on, the French water engineers noticed that the water environment in the Mekong Delta was physically and ecologically complex. The delta is extremely flat and newly constructed canals quickly interrupted the water traffic during low tide as the river contains a high number of sediments. This resulted in hogbacks ridges where deeper boats had to wait at these places until high tide and the intersection of these places often became markets and meeting points. The French however, perceived these areas mainly as ‘dead zones’, (Biggs et al., 2012) i.e., area of now use and detrimental to potential developments. The local inhabitants of the Mekong Delta and the engineers had different ideas about how nature and water should work. To the engineers, the hydrology, and rural functions of the water flows and the hogbacks ridges were seen as ‘exotic’ and a problem where solutions were needed. To the local inhabitants this was a natural irrigation system that required little labour (Vormoor, 2010). The tidal ebb and flow in the delta, which caused the hogback bridges as well, provided an important source for clean water and fertile sedimentation. Farmers had their own way of exchanging water by opening the bund in their paddy during low tide for drainage. During high tide clean water from the river would return to the paddies. French engineers overlooked this natural

irrigation system from the farmers because they also perceived this as 'exotic'. Even if this irrigation system was noticed by French engineers, the political pressure on them forced them to implement water control projects anyway (Biggs et al., 2009). In the late 1880's thousands of Vietnamese labourers were replaced by steam-powered dredging machines. This was the decision of the French where the return of the money spent went towards the French interests instead of the local Vietnamese labourers (Biggs et al., 2012).

In the beginning of the 20<sup>th</sup> century the number of inhabitants in the Mekong Delta was estimated to be around 1 million (Biggs et al., 2009). During this time the number of migrants marching from the North to the South increased and they settled along the newly dug canals (H. H. Nguyen et al., 2016; Vo et al., 2019). There was no focus on increasing the agricultural output yet and the development in the delta was mainly for military and navigation purposes for the French. The focus started to shift to agriculture when the French realised its potential (H. H. Nguyen et al., 2016). From then the promotion of water engineering for agriculture was seen as needed in the Mekong Delta by the French (Vormoor, 2010). A dike-building strategy was implemented to control the water in the delta. The plans of the French included closing off the delta for food security and building a massive network of dikes (Vo et al., 2019). To increase rice production and relocate farmers from the North of Vietnam, the 'Dutch dike' strategy was used. Encircling dikes were constructed for settlements in the Long Xuyen Quadruple, the Plain of Reeds (both broad depressions) and the coastal region. This would provide favourable conditions for agriculture as the dikes prevented seawater intrusion and controlled floods (Biggs et al., 2009). Back then two-thirds of land in the Mekong Delta was covered in acid sulphate soils, also called wastelands by the French. These wastelands were reclaimed for agriculture as a part of the French land reclamation strategy. The civilisation mission went further into the isolated places as new canals were dredged (Vo et al., 2019). The French acknowledged that by building canals, salinity intrusions was triggered so it was stated that saline protection infrastructure was needed. The immigrants from the North resettled into the rural areas in the Mekong Delta. Some call it the colonisation of the northern Vietnamese in the South (Vo et al., 2019). Figure 8 shows the French map of the Mekong Delta where it shows that most of the delta was used for rice production. The map is from around 1918-1930 so in this time the land used for rice production was extended even further. This map compares the area of the Mekong Delta to France itself. This is a visualisation of how big the delta and it is possible that the French wanted to show its agricultural potential.



**FIGURE 8 FRENCH MAP OF THE MEKONG DELTA FROM AROUND 1918 -1930. SOURCE: [HTTPS://MAPY.GEOGR.MUNI.CZ/MR.HTML?ID=708292](https://mapy.geogr.muni.cz/mr.html?id=708292)**

This agenda of the French would set a standard for many plans in the future of the Mekong Delta. It is argued that influence extends into the present day as many plans are still based on the notion of controlling the Delta (Vo et al., 2019). This agenda not only became the dominant approach, but it also led to path dependencies. The local social-ecological systems were challenged which led to environmental problems and social unrest (Q. H. Nguyen et al., 2020). The influence of the French agenda is further investigated and discussed in Discussion.

#### FAILURE REMEDY OF PAST WATERWAY CONSTRUCTION

Until the Great depression in 1930, the amount of rice cultivation quadrupled and was used to increase the export for France. State policies by the French government aimed at drainage and irrigation in the delta and more than 165 million m<sup>3</sup> of earth was dredged (Biggs et al., 2012; Vormoor, 2010). The colonial hydraulic infrastructures were not perfect and some of the rice plantations in the broad depressions were flooded. The biggest flood in 1937 destroyed most of the planted rice. Instead of reconsidering planting rice in the areas, the French decided to increase flood control structures (Biggs et al., 2009). During this time some of the local needs were not taken into consideration which led to local people rioting. This was because all the dredging and draining had resulted in the delta's ecology deteriorating and many fields had to be abandoned. Fields created by draining wetland did not result in the promise of 'endless horizon of rice' but into treeless 'abandoned' lands. This was the beginning of the fall of the French colonial regime which would eventually fall in 1945. From the 1930's, the construction of canals was limited as the Mekong Delta became a battle ground and in 1939 it was totally abandoned by the French and little maintenance was done. This led to the deterioration of the landscape and infrastructure in the Mekong Delta (H. H. Nguyen

et al., 2016; Vormoor, 2010). During the Indochina war which started in 1946, those who supported the Vietnamese revolution used the canal to attack the French. Barriers were set to trap French vessels during their attacks (Biggs et al., 2012). In 1946 the French left Vietnam and at the end of this colonial era 2.400 km of canals were dug (Vormoor, 2010). This was the beginning of the anticolonial war/Indochina war.

#### DEVELOPMENT UNDER THE AMERICANS

With the large area of abandoned land, the South Vietnamese government had to make sure that the delta would be protected from an uprising and scramble for this land. The abandoned land was prioritised for reclamation by expanding settlements towards the more isolated part of the delta. Many of the degraded lands were restored into wetlands and agricultural areas were expanded (H. H. Nguyen et al., 2016). The end of the Indochina war was marked in 1954 and until 1960, the Mekong Delta remained relatively peaceful. Refugees settled in the wetlands of the delta and the government of South Vietnam made an effort for conservation (Biggs et al., 2012). In the 1950s the first plans for sea dikes extension were created to further control the waterflow between the delta and the sea. This would also increase the range of lands which were irrigated with fresh water thus an opportunity to increase agricultural productivity (Biggs et al., 2012). The shift in agricultural development resulted in the start of the Green Revolution in the Mekong Delta. Traditional farming systems developed by local farmers were replaced by new agricultural technologies and initiatives which were more mechanised and engineered (Vormoor, 2010).

During this time the involvement of the US in the Mekong Delta started in the form of an internationally supported delta-wide master planning (Biggs et al., 2009). The involvement of the US was tied to its key strategy in the 'Third world'. The benefits of the American development of the Mekong Delta were compared to the benefits of the Tennessee Valley Authority (TVA). The TVA was a multipurpose program with 'high-modernist' visions. In 1949 President Truman announced that all the underdeveloped rivers and valleys in the world could make a TVA with the technical knowledge of the US that these countries lacked. During that time the worry of the US was that the newly independent countries would turn to communism. Many experts were convinced that knowledge on technology and planning could bring economic growth in Southeast Asia (Ekbladh, 2002). Economic growth in Southeast Asia was needed for recovery and economic stability would prevent the potential subversion of these countries to communism (Ekbladh, 2010; Molle et al., 2009). *'The TVA is a weapon which, if properly employed, might outbid all the social ruthlessness of the Communist for the support of the peoples of Asia.'* (Ekbladh, 2002, p.351). The TVA was promoted as a solution for the underdeveloped rivers and valleys in the world. The only thing that was needed for development was the US who had knowledge of technical development (Ekbladh, 2002).

Continuing the trend of the 1880's of involving machines, in the 1960's the USAID started to support American-made equipment. This was met with scepticism from the Vietnamese, as it would benefit the interest of the Americans. The equipment was diesel-powered and the projects were proposed with using these in mind

(Biggs, 2008). The US even hired the dredging enterprise from France who used to operate in the Mekong Delta. They operated and trained new crews for dredging (Biggs et al., 2009). Just as the French interventions in the Mekong Delta were with 'civilising' purposes, the Americans saw their efforts as a global 'development' mission (Biggs, 2008). The US' involvement in the Mekong Delta was to show that their involvement in Southeast Asia was positive, as it could have a positive impact economically and socially. The promise of the TVA was not only to deliver technologies from the US to the global South to help the modernisation over there, but it was also seen as a way to achieve democratic development. The TVA was criticised as the unintended social, environmental and economic impacts were not taken into account and peoples' needs, values, experiences and knowledge were ignored (Ekbladh, 2002).

Funds were made available from the US but the projects were conceptually and practically constrained because of the infrastructure left from the colonial-era. The understanding of the Americans about the hydrological landscape and biodiversity of the delta were limited. Together with international consultants who were interested in promoting the Green Revolution in Vietnam, they tried to get an understanding by conducting scientific research (H. H. Nguyen et al., 2016; Vormoor, 2010). In 1960 a Dutch consultancy company, started to be involved in the Mekong Delta as well. Dutch engineers helped American engineers to make plans for total water control in the Mekong Delta, based on the idea of watersheds. These plans, on paper, would make it possible for agricultural production to be independent from the seasonal hydrological trends (H. H. Nguyen et al., 2016). The US quickly made sure to be the first executive agent of the Mekong Commission to exert control over this project. The plan quickly changed from just technological interventions in the Delta for economic growth to transforming the whole Vietnamese countryside. The US-South Vietnamese Joint Development Group (JDG) was devoted to guide the long-term economic development of South Vietnam including teaching the Vietnamese the 'right' set of skills for agriculture. The JDG put a heavy emphasis on agriculture because most of the Vietnamese population remained rural and increasing the agricultural output was crucial for export and self-sufficiency. By 'properly developing' the Mekong Delta, the whole of Southeast Asia could be fed. Water control, infrastructure improvement and a change in agricultural practices were needed to achieve this 'proper development'. Larger farms with an efficient labour force were favoured over small tenant holdings in finding a solution to rural poverty (Ekbladh, 2002). The involvement of the Americans increased with the dredging programs being expanded in 1965. This was during the escalation of the Vietnam war and the increase of US forces being present in Vietnam. Much of the changes made in the physical landscape of the Mekong Delta were, again, made for strategic purposes. Airstrips, highways and military bases and camps were constructed (H. H. Nguyen et al., 2016).

The biggest barrier to this strategy was that during the involvement of the US in Vietnam for development, the US was also involved in the armed conflict between the Communist North of Vietnam and the Democratic South. With the collapse of South Vietnam, the Mekong Delta was no longer strategic for the US and they did not have a use for the development programs anymore. The use of chemicals

defoliant, such as the use of napalm for bombing, during the war caused an immense damage to the swamp forest. The ecological losses that came with it caused the landscape to further change (H. H. Nguyen et al., 2016).

#### REUNIFICATION OF VIETNAM AND CLOSING OFF THE DELTA

The Vietnam war ended in 1975 with the reunification of Vietnam and there was a time of Nation building. A central water state regulation management was introduced, and the diversification of agriculture was pursued. The Mekong Delta served as a space to develop in nation building efforts (Vo et al., 2019; Vormoor, 2010). The communist regime also forbids the private trade and land holding which led to land collectivisation. The focus was on the diversification of agriculture instead of the sole focus on rice. In order to do so, waterways were restored and excavated to facilitate agricultural collectivisation (Vormoor, 2010). This emphasis on growing rice cultivation resulted in the demand of fresh water for a rice producing environment. Saline water was considered a constraint to rice cultivation and it was not considered a resource and opportunity anymore (Biggs et al., 2012). Flood and salinity intrusions control systems were done at the same time with canal and irrigation works. This was done in the effort for irrigation works and to control water. Parts of the delta with an acid sulphate soil which were deemed unsuitable for agriculture at first, were now more arable with irrigation works. The Plain of Reeds, Long Xuyen Quadrangle and the Ca Mau peninsula were extended into paddy land (Käkönen, 2008; Vormoor, 2010).

The effects from the war were still visible in the 1980s and collectivised land holding was recognised as inefficient. The failure to increase land productivity for food security led to economic reforms in 1986 in the form of the political and economic renovation policy called *Đổi Mới* (Q. H. Nguyen et al., 2020; Vormoor, 2010). This renovation policy was characterised by the decentralisation, democratisation and liberalisation of politics and economics (Vo et al., 2019; Vormoor, 2010). Agriculture was privatised and this led to an increase in production levels. This is where the delta became one of the most productive rice cultivation zones in the world. The triple rice strategy of Vietnam was used to turn the Mekong Delta into the country's rice bowl for food security. Infrastructural investments were justified, and dikes, canals and pumping stations were built. The dikes were mainly constructed in the coastal area of the delta (Biggs et al., 2009; Vo et al., 2019). The end of quotas for rice production in *Đổi Mới* policies allowed farmers to diversify their agricultural output. The problem was that they were often constrained by the water management systems that were built for rice irrigation (Biggs et al., 2009).

Since the reforms in 1986 the Vietnamese government tended to go with the development interests of the private sector. The costs of maintaining canals and other infrastructure for agriculture was shifted away from the central government as part of decentralisation. At the same time MARD (Ministry of Agriculture and Rural Development) and MONRE (Ministry of Natural Resources and the Environment) became responsible together for controlling the development of waterways. In the past only MARD was responsible for the development (Biggs et al., 2009).

Collectivisation strategies became less strict and the agricultural sector was privatised (Biggs et al., 2012). In combination with further improvements of the canals and the use of fertilisers, the agricultural output rapidly increased and by 1989 Vietnam became a rice exporter again. By 1997 Vietnam was the second biggest rice exporter in the world with 80% of this exported rice coming from the Mekong Delta (Vormoor, 2010). At first the rice farmers' livelihoods were improved by the increase of their agricultural output. But after a few years, in the mid 90's their income could not match with the economic growth and they soon became the poorest group in the country (Biggs et al., 2012). During this time water engineering was taking place at a secondary level as the focus was on agricultural output. (Vormoor, 2010).

A Dutch consulting company was commissioned by the World Bank and the Mekong River Commissions in 1991 to develop the Mekong Delta Master Plan. They took inspiration from the plans made in the 1960s by the Dutch and American engineers (Vormoor, 2010). The start of a new millennium was characterised with hydraulic constructions to prevent saline intrusion and protect against floods. The last major irrigation works were finished in 2000 (Vormoor, 2010). These modern irrigation works allowed for two or three crops of rice per year instead of just one (Molle et al., 2009). This phase is called 'Closing off the Delta' as mainly new barriers were constructed such as dikes, sluices, gates, dams and weirs (Vormoor, 2010).

## MOVING AWAY FROM RICE MONOCULTURE

The end of the of the 1990s the focus on the rice monoculture shifted to the diversification of agriculture. The shift to diversification already started during *Đổi Mới* but at the end of the 1990's a rural development policy with a special focus on agricultural diversification was announced. This policy was even further emphasised from 2002 and there was a significant increase in aquaculture and perennial crops such as fruits (Vormoor, 2010).

Aquaculture was promoted by the Vietnamese government as the rice process on the world market were breaking down. The main products from aquaculture production are shrimps and catfish. Rice farmers who had access to the necessary resources to change to aquaculture made the change. In 2008 the Mekong Delta was responsible for 75% of the aquaculture production in Vietnam. Shrimp farming is mainly done in the coastal area of the delta where mangrove forests combined with saline and brackish water result in favourable conditions for cultivation. Catfish farming is done in freshwater upstream in flood prone areas. With attention shifting from intensive rice agriculture to aquaculture, problematic factors for agricultural development were now considered a favouring factor (Vormoor, 2010). A big hindering factors were the large-scale water control projects build in the past as they were made for rice production. This results in challenges within water management in the Mekong Delta as the saline water protection systems prevent farmers to control to intrusion of brackish water (Käkönen, 2008). Since the diversification policy in 2002 the control systems have been modified to let brackish water in, but fundamental modifications are needed to fully support the aquaculture development. It is argued that the resources for aquaculture were

overexploited and fully exhausted in 2009 while percentage of aquaculture in the Mekong Delta is still increasing (Vormoor, 2010).

While the policy for agricultural diversification caused in sharp increase in aquaculture, the diversification of crops also increased. From 2001 to 2066 the areas for rice cultivation decreased with 6% while the areas for perennial crops increased with 4%. In all provinces in the Mekong Delta, there was a significant increase in fruit cultivation. The change from rice cultivation to fruit cultivation is only possible with enough money and knowledge. The agro-hydrological conditioned needed are cost intensive and they are different from the ones needed for rice cultivation and aquaculture. The shift to agricultural diversification has led to the need for investments in new water management infrastructure. The problem was that while there was a big wave of agricultural diversification, the majority of the farmers in the Mekong were still rice farmers. The older water management infrastructure has to be maintained. Although the diversification efforts were done to alleviate poverty, it resulted in a paradox (Käkönen, 2008; Vormoor, 2010). The farmers who were able to change to aquaculture and perennial crops are richer farmers who can afford the investments to change their product. New infrastructure suitable for aquaculture and perennial crops would benefits the richer farmers. This would lead to an increase in social inequality (Vormoor, 2010). The success rate of agricultural production depends on the water management infrastructure and by building new infrastructure for aquaculture and perennial crops, the poorer rice farmers are negatively affected (Käkönen, 2008).

Whilst the agricultural productivity of the Mekong remains high, in the more recent years the 'production costs' have gone up. This is because of the negative impacts of climate change. This leads to the current need alternative environmentally friendly options. The changes that are made in the future should acknowledge the poorer farmers and support them (Käkönen, 2008).

## PROJECTS AND POLICIES FOR CLIMATE CHANGE ADAPTATION

The agendas from the professional communities in the Mekong Delta have continuously changed throughout history. In the last chapter the various trends and dynamics in the Mekong Delta were discussed. Many see the old strategy (building dikes, sluice gates, irrigation infrastructure and canal project) as ineffective today (Vo et al., 2019). These strategies from the past ideology of control at a grand scale have resulted in man-made problems that influence the present-day challenges. The way of water management in the Mekong Delta is technocratic as a result of the past (Biggs et al., 2012). It is argued that measures for climate change adaptation focus on short-term effect migration instead of a long-term strategic plan (Minkman et al., 2022). The following two plans are analysed: the Mekong Delta Plan and Resolution 120/NQ-CP. Both plans are mentioned by all interviewees as an overarching masterplan where most governmental institutions, donors and academics fall refer to this plan when talking about climate change adaptation in the Mekong Delta.

### MEKONG DELTA PLAN

The transformation of the Mekong Delta in the past to become self-sufficient in rice led to a dike infrastructure that was designed for rice irrigation. The infrastructures for agricultural development did not comply with the challenges of the Mekong Delta. Especially the newer challenges of climate change (Vo et al., 2019). This led to the development of the Mekong Delta Plan (MDP) in 2013 which contains the main climate change adaptation strategy (Vo et al., 2019). The MDP is a result of the Dutch Delta Approach. As the Dutch government wanted to link the promotion of Dutch business interest to aid activities. The government promoted the Dutch water expertise as advanced and successful in planning for climate change adaptation. The countries selected for this strategic partnership were assessed on the potential for future profit (Hasan et al., 2019). As a vehicle for the translation of knowledge, the measures in the MDP are for influencing decision makers and policy agendas for sustainable development challenges (Vo et al., 2019; Weger, 2019).

The MDP is a reference document with strategic advice concerning the integrated long-term development for a safe prosperous and sustainable Mekong Delta (Smajgl, 2018; Vo et al., 2019). During the process of making the MDP, the deltas of the Netherlands and Vietnam were considered to be comparable objects. Dutch knowledge could solve them as the problems of the Mekong Delta could be standardised because of the similarities (Weger, 2019). In the end the MDP was very different from the Dutch Delta Plan (NL, #2). The focus of strategic planning in delta planning on strategic choices with a long-term, integrated vision for sustainable development. This vision is to be included in government plans and other (semi)public actors. It allows for an adaptive framework for future actions, and it does not describe what has to be implemented exactly. A form of coordinated and decentralised implementation is implied (Korbee et al., 2019).

*“It was never a project from the Vietnamese side. Officially Vietnam send a letter to the Netherlands for help to make the MDP. It happened under the influence of plans for what to do in the coming years between the governments. Vietnam was not*

*really waiting for it. There was pressure to deliver something so the Dutch wrote the plan. The Dutch had to sell the plan.” (NL, #2).*

Many of the Vietnamese considered the MDP as unsuitable for the local governance system. From the Vietnamese side the Dutch approach of strategic planning lacked specificity. In this approach decision-making is flexible and adaptive but the Vietnamese preferred a strong direction and choosing one of the possible scenarios which is more practical to implement (Weger, 2019). The intention of the MDP is not to be executed exactly and it does not have a legal status for the government to implement. The goal is to give the Vietnamese government inspiration to translate ideas to binding plans (NL, #2). While in the first instance the Vietnamese government was unwilling to accept the first draft of the MDP, the wider (international) donor community and development partners supported it. Some Vietnamese participants even found the MDP unsuitable for the Vietnamese system of governance as it was a foreign document. In theory, they did appreciate many of the recommendations made in the MDP. In the end the ‘vagueness’ of MDP attracted a lot of support as it allowed space for reinterpretation for different actors with different interests (Weger, 2019).

The agenda of the MDP consists of the following: economic attractive development, environmental sustainability, capacity to adapt to climate change (Royal Haskoning DHV et al., 2013; Vo et al., 2019). The primary goal is to shift away from the historic emphasis on food security and thus, the agricultural production of rice. It is acknowledged that the past agenda of intensive rice production has a negative impact on the adaptive capacity of the Mekong Delta. Furthermore, it is predicted that rice production will stop being economically attractive with a slowdown in population growth (Vo et al., 2019). It became clear that developments for climate change adaptation were constrained by the reliance on infrastructure which were built in the past (Vormoor, 2010). This historical reliance on infrastructure to control water is recognised as a constraint in the MDP. The development pathways possible are limited (Weger, 2019).

The MDP is a provocative agrobusiness industrialisation strategy. The Dutch Delta Approach is barely recognisable in the MDP anymore (Hasan et al., 2021). The MDP is produced with existing knowledge, but it does lack local knowledge. The existing knowledge is on natural resource management, social and economic developments, climate change, developments upstream and scenario planning (Royal Haskoning DHV et al., 2013). Most of these interventions are rooted in engineering practices. The problem with this is that infrastructure is considered over human concerns. The complexity of the social and economic impacts is often overlooked. There is a tension between the scientific discourses employed and the local knowledge of the people living in the Mekong Delta and who depend on the delta (Molle et al., 2009). This is because the MDP is a high strategic plan and it is made without citizen participation. The stakes are represented by various organisations, often with big interests. It is a very general plan and (NL, #2) while there is growing evidence that climate change adaptation strategies need to consider a gendered approach to be effective, the MDP does not include this perspective. Nor is it considered a strategy for the most vulnerable group (Smajgl, 2018).

## RESOLUTION 12/NQ-CP

In 2017 the Vietnamese government implemented Resolution 120/NQ-CP (Resolution 120 from now on) on sustainable and climate-resilience development. Resolution 120 is a confirmation that the ideas from the MDP are endorsed by the Vietnamese government at the highest level (Vo et al., 2019). It contains mandates and responsibilities for ministries on a national level and for the 13 provinces in the Mekong Delta (Minkman et al., 2022). The process of adapting the MDP to Resolution 120 is also called a policy translation (Laeni et al., 2021; Vo et al., 2019). It contains many ideas proposed in the MDP which is a proof of convergence of the MDP and the political actors. *'It is considered the most important policy that has been issued by the government (on climate change adaptation – red.) and its key messages are similar to the key messages of the MDP'* (VN, #1). It is based on the interpretation of the Vietnamese government and the adaptation of their insights on the Mekong Delta management frame. The strategic partnership with the Netherlands continues in this resolution for scientific and technical cooperation (Laeni et al., 2021). Regional coordination is promoted in Resolution 120.

In Resolution 120 the focus moves from 'fighting' against challenges to using them as an opportunity. Climate change adaptation and adaptation to sea-level rise remain important objectives. The focus on moving towards diversified agriculture from intensive rice cultivation is even greater than in the MDP (Vo et al., 2019). *'Before the MDP we focused on the rice production, according to the resolution, we try to take a look at how to increase the agricultural economic value. Besides rice production we also care for other production, for example shrimps and other agricultural cultivations'* (VN, #1). Nature-based development will be pursued and there will be more investments into agro-business. Salinity is no longer treated as a threat but as a resource. This was all proposed in the MDP (Vo et al., 2019). *'Maybe 20 years before when we talked about how to respond to salinity we usually thought about dikes or flood rises to block salinity intrusion. However, from Resolution 120 we changed it. We found that we need to live by on the natural system and we will use the dike or flood rise in some necessary cases. It's not usual to use it for salinity response'* (VN, #1).

## COMPARISON BETWEEN THE TWO DOCUMENTS

In this part the MDP and Resolution 120 are compared with to each other. This will be done by looking at the structure of Resolution 120. As mentioned before in the theoretical framework chapter, barrier to overcome in climate change adaptation are often reduced into techno-managerial barriers which are normative judgement which have root in colonial histories (Ndlovu-Gatsheni, 2013; Ober & Sakdapolrak, 2020). Another way to identify if some decisions are rooted in the colonial history.

For the analysis multiple quotes are shown which are in line with these techno-managerial barrier and the rhetoric of progress. These are compared with quotes from the MDP. Words which are in line with the frameworks of table 2 and 5 are highlighted It will be analysed if its sentiment is still the same as in the MDP.

## RESOLVES

TABLE 7 QUOTES SECTION 'RESOLVES'

<b>Resolution 120</b>	<i>"Develop the Mekong Delta's <b>potentials and advantages</b> to foster its socioeconomic development" (Vietnamese Government, p. 1)</i>
	<i>"This region has shown <b>remarkable growth</b> with great and <b>significant achievements</b> especially in agricultural and rural sectors" (Vietnamese Government, p. 1)</i>
	<i>"Infrastructure has been gradually <b>developed in an uniform manner</b> in order to better serve socio-economic activities and improve people's living standard." (Vietnamese Government, p. 1)</i>
	<i>"In the context of globalization and international integration, the Mekong Delta has a <b>great opportunity for development</b> but also faces a <b>great challenge because it is vulnerable to natural changes</b>" (Vietnamese Government, p. 2)</i>
<b>MDP</b>	<i>"Socio-economic developments determine to a large extent the <b>ever-increasing pressure on the delta's land and water resources</b>, even more than climate change." (Royal Haskoning DHV et al., 2013, p. 7)</i>

The resolves from Resolution 120 is an introduction in to the document. This part mainly describes what is needed in develop the Mekong Delta and the challenges. It starts off with socio-economic development and opportunities for development.

It can be noted that although the resolution is on 'sustainable and climate-resilient development', sustainability and climate resilience is not strongly implied. This text mainly implies that socio-economic development of the delta is good and needed, and not as a cause to natural dangers. The dangers of climate change are described as external danger. The MDP does acknowledge that socio-economic development poses a risk on the delta which it says to be bigger than climate change.

TABLE 8 QUOTES SECTION RESOLVES PART 2

<b>Resolution 120</b>	<i>"The state management of some fields between local and central government has shown <b>overlapping issues and lacks close cooperation.</b>" (Vietnamese Government, p. 2)</i>
	<i>"The <b>mobilization</b> and use of resources for investment and development <b>has remained weak.</b>" (Vietnamese Government, p. 2)</i>
	<i>"<b>High-quality human resources</b> tend to move to other areas" (Vietnamese Government, p. 2)</i>
<b>MDP</b>	<i>"However, despite all efforts, industrial development in the Mekong Delta <b>falls behind and actual developments are deviating from existing government policies aimed at high-tech agricultural development and full exploitation of the competitive advantages of the region.</b>" (Royal Haskoning DHV et al., 2013, p. 7)</i>
	<i>"Where the agricultural policy has been successful, the demographic, social and economic development shows that the delta has comparative advantages over other regions of Vietnam. But, the <b>delta has also pronounced comparative disadvantages</b>, which results in a weaker base for urbanisation, industrialisation and hence in outmigration. <b>The competitiveness and prosperity of the delta depend very much on the efficiency and effectiveness of investments for flood protection, salinity control, water quality and fresh water supply.</b>" (Royal Haskoning DHV et al., 2013, p. 14)</i>

The second part of resolves describes some shortcomings for socio-economic development. Resolution 120 gives the cooperation between government and the mobilisations of resources as a main shortcoming. The MDP implies that the efficiency and effective of investments are for water resources are a main shortcoming for socio-economic development.

## VISIONS AND OBJECTIVES

TABLE 9 QUOTES SECTION 'VISIONS AND OBJECTIVES'

<p><b>Resolution 120</b></p>	<p><i>“The Mekong Delta will sustainably, safely and prosperously develop on the basis of high-quality agriculture in combination with services, ecological tourism, and industry, especially processing industry, thereby increasing the value and competitiveness of agricultural products. The infrastructure system will be planned and developed in <b>a uniform and modern manner</b> towards proactivity, intelligence and resilience to climate change to ensure safety upon occurrence of natural disasters. Natural resources will be used in a <b>proper manner</b>. Biodiversity, cultural <b>traditions and history will be preserved and enhanced</b>. People’s <b>material and spiritual life will be improved</b>.” (Vietnamese Government, p. 2)</i></p>
<p><b>MDP</b></p>	<p><i>“The long-term vision of the Mekong Delta accommodates for the <b>prime assets and values of the delta</b>. Its main targets are socio-economic enhancement, safety and sustainability.” (Royal Haskoning DHV et al., 2013, p. 54)</i></p>
	<p><i>“The premise for the Mekong Delta Plan is to contribute to realising and maintaining a prosperous delta, both economically and socially, in <b>which its population can thrive in a vigorous and dynamic economy</b> that is founded on sustainable use of its natural resources, and well adapted to changes in water resources and climate.” (Royal Haskoning DHV et al., 2013, p. 7)</i></p>

Both Resolution 120 and the MDP describes a vision for a sustainable and safe development of the Mekong Delta. The bigger difference is that the MDP mentions climate adaptation, but socio-economic development is still highlighter as important. While the term ‘values of the delta’ are used, it is not describing what these values are. In Resolution 120, the preservation and enhancement of traditions and history are described. The spiritual life of the Vietnamese people is mentioned as well. In this case it is visible that this point of Resolution 120 is not fully in line with the rhetoric of progress and are still embracing Vietnamese values. The policy was translated to the local context.

## VIEWPOINT

TABLE 10 QUOTES SECTION 'VIEWPOINT'

<p><b>Resolution 120</b></p>	<p><i>“Facilitate sustainable and prosperous development by adapting, promoting strength and potential, <b>turning challenges into opportunities to serve development</b>, thereby ensuring prosperity for local people as well <b>as preserving traditional and special cultural values of the Mekong Delta</b> and paying attention to land, water protection, and especially local people.” (Vietnamese Government, p. 3)</i></p>
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	<i>“Respect natural laws and avoid violent interference with nature; select development models adaptive to natural conditions and friendly to the environment <b>and develop sustainably with the motto “living with floods, brackish water and saltwater”</b>; make plans and take measures for response to natural disasters such as storms, floods, droughts and saltwater intrusion and to the most unfavorable situation due to climate change and development of Mekong River upstream development”. (Vietnamese Government, p. 3)</i>
<b>MDP</b>	<i>“Referring to the analysis of the <b>delta’s vulnerabilities and its strengths and opportunities</b>, exploration of the possible measures will follow <b>three lines of control</b>: a. flood control (i.e. flood protection and control for irrigation); b. fresh water control (includes availability and quality); c. salinity control (i.e. protection where fresh water is required and adaptation to saline water related economy).” (Royal Haskoning DHV et al., 2013, p. 17)</i>

In this section, Resolution 120 describes preserving traditional and special cultural values again. Development in the Mekong Delta is done with respect for nature. While the MDP does has a chapter called ‘living with water’, it is not fully explored in the MDP. The plan mainly focusses on control. The quote from the MDP mentions adaptation to saline water related economy but not living with saline water. Again, this is where the idea from the MDP is translated into the local context.

POLICY AND STRATEGIC ORIENTATION FOR DEVELOPMENT

**TABLE 11 QUOTES SECTION POLICY AND STRATEGIC ORIENTATION FOR DEVELOPMENT**

<b>Resolution 120</b>	<i>“The Mekong Delta development model must be <b>human-centered</b>, serve people and narrow the gap between the rich and the poor; focus on quality rather than quantity” (Vietnamese Government, p. 4)</i>
	<i>“Switch development model to <b>improve economic efficiency</b> and attach importance to <b>preservation of the region’s cultural, historical, biological and ecological values</b>.” (Vietnamese Government, p. 4)</i>
	<i>“Combine <b>modern technology with traditional knowledge</b> and experience, ensure the stability and livelihood of the people” (Vietnamese Government, p. 4)</i>
	<i>“Top priority should be given to urgent works and works that are meant <b>to boost the entire region’s economy</b> and necessary works” (Vietnamese Government, p. 4)</i>
<b>MDP</b>	<i>“An important next step after formulation of the vision and strategy in the MDP is to start a process creating administrative or governance conditions to really use the MDP as an orientation scheme for making truly integrated decisions on how the delta management can become adaptive, <b>how investments can be steered to no-regret measures and to a higher value economy</b>.” (Royal Haskoning DHV et al., 2013, p. 18)</i>

In this section the main of Resolution 120 and the MDP is that economic development has to be ensured. The MDP focused more on the technical aspects than Resolution 120. Resolution 120 is more specific as how economic development should be increased and does mention traditional knowledge and cultural values.

The MDP is more about efficient and effective no-regret measures. While the MDP focused a lot on no-regret measures, it was not specified what these were. As it is described before, the vagueness of the MDP is what made it attractive to the Vietnamese actors (Weger, 2019). The reinterpretation of the Vietnamese were made to be fit into the local context.

## PROFESSIONAL ACTORS INVOLVED AND THEIR ROLE

As described in the last chapter, the MDP is a strategic plan which implies a form of coordinated implementation. The meaning of coordination in strategic planning is not that all actors involved mean and want the same thing, which would result in the plans not being implemented. For implementation of strategic plans to be effective, it is important to have a better understanding of the involved actors (Korbee et al., 2019). In this chapter, the various professional actors who are involved in delta planning are analysed according to the actor analysis framework (Table 3).

### VIETNAMESE GOVERNMENT

Vietnam has a hierarchic government where national policies are directing climate change adaptation on a provincial level (Minkman et al., 2022). Since the reforms in 1986, the Ministry of Agriculture and Regional Development (MARD) and the Ministry of Natural Resources and Environment (MONRE) share the responsibility of delta planning (Biggs et al., 2012). Traditionally MARD is responsible for land use and water while MONRE is responsible for which climate change scenario is used for planning (Zegwaard et al., 2019). MARD is an older ministry which was always concerned with irrigation since it exists. MONRE is a relatively newer ministry and is taken less seriously (NL, #2). During the process of the MDP, the MONRE and MARD were leading in the interests of the Vietnamese government (Weger, 2019). The Ministry of Planning and Investments (MPI) is also involved in planning for the future in the Mekong Delta (VN, #1). Table 7 shows the position and function from these ministries. From the description of their position and function, it is clear that the areas interests from MARD and MONRE are overlapping. Irrigation (MARD) and water resources (MONRE) are almost the same in the context of the Mekong Delta as most water is used for irrigation. This causes friction between these two ministries (NL, #2). In the process of drafting Resolution 120, MONRE was responsible for economic growth while MARD was responsible for agricultural production, irrigation, and disaster prevention infrastructure. The MPI was tasked with resource mobilisation for implementation (Minkman et al., 2022). This is a sign that MONRE has less power than MARD since the power to make discission water resources, which is normally in their mandate, was not given to them. As it is mentioned before, the MPI is also involved in planning for both the MDP and Resolution 120. Their interests in climate change adaptation is lower than MARD and MONRE because it is not in their mandate.

Ministry	Position and Function
MARD	Ministry of Agriculture and Rural Development (MARD) is a governmental agency performing state management functions in the fields of agriculture, forestry, salt production, fishery, irrigation/water services and rural development nationwide, including state

	management functions with regard to delivery of public service in accordance with legal documents
MONRE	The Ministry of Natural Resources and Environment is a governmental agency performing the function of state management of land; water resources; minerals and geology; environment; hydrometeorology; climate change; survey and cartography; integrated management of marine and island resources and protection of the marine and island environment; remote sensing; and state management of public services in the fields under its management.
MPI	The Ministry of Planning and Investment is a government agency which performs the functions of state management over planning, development investment, and statistics, including the provision of general advice on strategies, master plans, plans for national socio-economic development and public investment; on mechanism and policies for economic management; on domestic investment, foreign investment into Vietnam and Vietnam's investment abroad; economic zones; on official development assistance (ODA) source, preferential loans and foreign non-governmental aids; on bidding; on development of enterprises, collective economy and cooperative sector; on statistics; performs the state management over public services in sectors, fields under its state management as prescribed by laws.

**TABLE 12 MANDATES FROM ACTORS. SOURCE:**

[HTTPS://WWW.MARD.GOV.VN/EN/PAGES/HISTORY-OF-ESTABLISHING-AND-DEVELOPING-MINISTRY-OF-AGRICULTURE-AND-RURAL-DEVELOPMENT.ASPX](https://www.mard.gov.vn/en/pages/history-of-establishing-and-developing-ministry-of-agriculture-and-rural-development.aspx);

[HTTPS://MONRE.GOV.VN/ENGLISH/PAGES/TASK-FUNCTION.ASPX](https://monre.gov.vn/english/pages/task-function.aspx);

[HTTPS://WWW.MPI.GOV.VN/EN/PAGES/CNNV.ASPX](https://www.mpi.gov.vn/en/pages/cnnv.aspx)

The Mekong Delta can be divided into three different areas: the upper delta, the central grounds, and the coastal area. Each of them has specific characteristics and their socio-economic development plan is different from the other regions. The role of the government is to coordinate these development plans and how local authorities and provinces can mobilise the resources (VN, #2). The Mekong Delta consists of 13 provinces with each province having its own local government. 'Working in the Mekong Delta is not only working with one person but with 13 different provinces' (VN, #2). MONRE and MARD also have departments on a provincial level and there is little coordination between these departments (NL, #2). Because of the hierarchical system, the provincial government often has to wait for instructions from the National government (Minkman et al., 2022). Changes in Vietnam must come from top-down, bottom-up changes are very hard.

#### DUTCH INVOLVEMENT IN VIETNAM

The strategic partnership arrangement between Vietnam and the Netherlands started in 2010 when they signed for long-term collaboration. This collaboration was on water management and climate change adaptation which led to the production of the Mekong Delta Plan (MDP) in 2013 (Smajgl, 2018). This was done in partnership with the Vietnamese governments and Dutch Government but the Dutch later transitioned to a Dutch organisation (Weger, 2019). The Vietnamese demand for delta expertise from the Netherlands was created to negotiate and maintain diplomatic and trade relations and it is part of the Dutch development cooperation agenda. This goes against the Dutch promotional text for delta planning

which implies that their expertise flows naturally to where it is needed. The Mekong Delta in Vietnam was the first destination of the Dutch to implement their delta planning expertise. There was a lot of pressure on the Dutch side to succeed. It was implied that both countries had the same vulnerabilities as they are both delta countries. This resulted in the Mekong Delta being problematised by the Dutch as vulnerable and ill-prepared for climate change. During the resilience planning for the Mekong delta, the strategic plan evolved into one with technical interventions for coast protection (Hasan et al., 2019).

Agriculture needs to transform that is obvious. But maybe the food system has to transform in a more integral way. That will be supported by the Netherlands

Dutch Embassy	The Embassy in Hanoi and the Consulate General in Ho Chi Minh City of the Kingdom of the Netherlands in Vietnam is focused at representing, promoting, and protecting the interests of the government of the Netherlands. The Embassy’s goal is to establish and maintain strong economic and diplomatic relations with Vietnam to promote business and investment opportunities for the Dutch nationals and businesses.
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**TABLE 13 MANDATE DUTCH EMBASSY. SOURCE: [HTTPS://NL.LINKEDIN.COM/COMPANY/THE-KINGDOM-OF-THE-NETHERLANDS-IN-VIETNAM?TRK=PUBLIC\\_PROFILE\\_EXPERIENCE-ITEM\\_PROFILE-SECTION-CARD\\_SUBTITLE-CLICK](https://nl.linkedin.com/company/the-kingdom-of-the-netherlands-in-vietnam?trk=public_profile_experience-item_profile-section-card_subtitle-click)**

From the Dutch side strategic advisors from the Netherlands and technical experts who were led by chief technical based in Vietnam, were involved. These technical experts were financed by the Dutch government through the Partners for Water program (Weger, 2019). The Embassy of the Netherlands in Hanoi is the representative of the Dutch Ministry of Foreign Affairs. Their goal is to secure policies financed by the Dutch government. *“They have more influence than you think. They want to secure the Dutch policy. It’s important for them that NL will be seen as a guiding country for the water sector ‘branding’.”* (NL, #2). They have a controlling function on projects financed by the Dutch on a local level because they are the first contact point. (NL, #2).

#### ACADEMIC EXPERTS

Most of the expert who are working in or on the Mekong Delta are engineers, with most of them specialised in hydrology. Vietnamese engineers are often schooled in the Netherlands, but most are schooled in so-called Water Resources University which is a mono-disciplinary university. Eventually most of these academic experts end up working for the government (Benedikter, 2014). These universities are heavily focussed on engineering (Royal Haskoning DHV et al., 2013). One of the main actors in the Mekong Delta is the DRAGON-Mekong institute in Can Tho, a research institute for change. This institute has a connection with Mississippi Delta in the United States and they are connected with the partnership between the United States Geological Survey (USGS) and Can Tho University (VN, 1). The Dutch experts are from universities or consultancies, Royal Haskoning DHV and Deltares for example. They often have relationships with experts in Vietnamese universities, especially Can Tho University (NL, #2). The scientists who do research in delta get

their funding from a government science budget and international donors including the Netherlands and the United States (VN, #1).

*“Before the MDP we focused on the rice production, according to the resolution, we try to take a look at how to increase the agriculture economic value. Besides rice production we also care for other production, for example shrimps and other agricultural cultivations”. (VN, #1).*

This quote by a Vietnamese engineer implies that engineers are mainly concerned with increasing the agricultural economic value, from rice production, aquaculture, and other crops.

#### INTERNATIONAL DONORS.

The international community is an umbrella term for international stakeholders such as institutions, organisations, donors, and investors. From data collection it became clear that the international community has a lot of power. The following were mentioned: World Bank, JDCG, JICA, ADB, USAID. International financial institutions have a potent voice in the dialogue in Vietnam because the international community has financial power (VN, #2; NL, #2). Most of the Vietnamese policies are heavily influenced by the international communities. Even though the MDP does not have a juridical status, the partnership between the international organisations and the Vietnamese government holds onto the ideas of the MDP and follows the key messages. These ideas will make it into policies which will be implemented by the Vietnamese government (NL, #2).

The international community has experience with integrated development and how to influence projects in the Mekong Delta that conform to the MDP (Royal Haskoning DHV et al., 2013). ‘The local and central governments are open and listen to what international donors and the international community say.’ (VN, #2). The MD calls for the acknowledgement of the international community to the Vietnamese effort in developing the MDP (Royal Haskoning DHV et al., 2013). The World Bank is committed to the MDP to finance it (NL, #2). They also support Resolution 120 and its integration is a condition for a 300 million USD loan to Vietnam (Minkman et al., 2022). Friction between organisations can ensue because even though the Netherlands makes the plans, they do not invest a lot in the Mekong Delta for implementation and infrastructure. It is mainly other organisations who invest in the delta. For example, GIZ does mention that they implement the plans of the Netherlands with German Money (NL, #2).

It is mentioned by multiple interviewees that Japan has a lot of power in the Mekong Delta (Biggs et al., 2009), as JICA is one of the biggest investors in the Mekong Delta (VN, #1; VN, #2; NL, #2). The infusion of cash from Japan is even described as unusual (Biggs et al., 2009). This means that they have a lot of influence in delta planning. They do support the MDP, but they were not involved in the process of making it. Japan mainly focuses on infrastructure and industrialisation, but they do comply to the MDP for coordination (NL, #2). ‘The international organisations coordinate with each other, so they do not all do the same stuff. (VN, #1)’ Compared to Japan, the Netherlands is a very small investor.

#### RELATIONSHIP BETWEEN ACTORS

Initially, the MDP was not a project from the Vietnamese side. The Vietnamese government sent a letter to the Dutch government for help to make the MDP but it happened under the influence of plans for what to do in the coming years between the governments. *“The Vietnamese were not really waiting for it and these was pressure to deliver something so the Dutch wrote the plan and they had to sell it to the Vietnamese”* (NL, #2).

Despite the promotional text from the Dutch government putting Dutch expertise forward as an export product that reaches the destination by diffusion, in practice all parties have the desire to learn from each other. They all tried to work together to understand all the possible ways that climate change can affect the Mekong Delta (Hasan et al., 2021). *“The Dutch experts and the Vietnamese partners work together, and they learn from each other.”* (VN, #2). It is not a one-way street where the Dutch experts come to Vietnam to tell the experts there what to do. The relationship between the experts is often described as equal. *“Professionals from universities or consultancies often have relationship with Vietnamese professionals built over a longer time.”* (NL, #2). Many Vietnamese engineers and scientist have visited or even studied in the Netherlands to learn about the Dutch Delta Approach (VN, #1). This contributes to the understanding between the experts of these two countries.

The Dutch embassy does the mediation between the Dutch partners and the Vietnamese government, and they have contact with the ministries in Vietnam (NL, #2). *“While the international cooperation between the Netherlands and Vietnam is not a development relationship, the relations is never equal as the Netherlands has the money. This did change during the making of the MDP as Vietnam paid a sum by itself”* (NL, #2). This implies that the beginning of the making of the MDP, the Netherlands paid the most and this resulted in an unequal relationship.

Within Vietnam the relations between the actors are hierarchical. MARD and MONRE report to the government and prime minister. The central government instructs the provincial government, and the provincial government often waits for instructions before capturing their actions on paper. The provincial government always reports to the central government and has little freedom to implement their own policies. The progress on Resolution 120 by the provincial government is reported quarterly and annually. If they want to make any changes they first have to report to the DPI (Department of Planning and Investment, the MPI on a regional level). Sometimes collaborations between upstream and coastal provinces are initiated because of the lack of guidance on a national level. The provincial governments are more ‘in a hurry’ for climate change adaptation measures. This can lead to friction between the changes from bottom-up by the provinces with the plans proposed from top-down (Minkman et al., 2022). It is clear that those with more money have more to say. In Vietnam this translates to those higher in the hierarchy receiving money thus having more power.

## DISCUSSION AND CONCLUDING REMARKS

In this chapter the results and findings are discussed on the connection between the colonial history of Vietnam and today's planning in the Mekong Delta. In order to identify this connection, the framework for the colonial matrix of power (CMP) (Table 4) is used to analyse the results. It is investigated if after the formal end of French colonisation in Vietnam, the way of thinking, feeling and being associated with European global domination remains (Adams et al., 2018; Maldonado-Torres, 2011). Coloniality is manifested in the rhetoric of progress, modernity and development (Lee et al., 2015; Tlostanova & Mignolo, 2009; Woons & Weier, 2017) and the language framework (Table 5) is used to identify this rhetoric.

From literature it is often argued that the many challenges that the societies in the Mekong Delta faces today are results of actions in the pasts. The past ideologies of centralized state control resulted in mechanistic approaches in delta planning (Hasan et al., 2021). The need to centralise control over water is still affecting water management today. This started in the French colonial time and the Americans continued this in their effort to export the TVA (Bakker, 1999). This dependency on older technological approaches results in the contemporary demand for irrigation and flood protection. Agricultural intensification has led to path dependency as well (Biggs et al., 2009). The current environment of the Delta is a product of engineering decision made in colonial times have a significant constraint on climate change adaptation plans (Käkönen, 2008). The promotion of water engineering to increase the agricultural production of rice from the French colonial times still remains today.

### THE STRUGGLE FOR ECONOMIC CONTROL

In the past adaptive farming systems on small-scale construction were done by farmers but the French saw the need to control water when they realised the potential to increase agricultural output (Vormoor, 2010). The dependency on mechanical solutions stems from the past where local labourers were replaced by dredging machines which made the state and local authorities dependent on firms. This dependency is a vulnerability for those in the Mekong Delta and makes the firms more powerful. The financial cost is ever-increasing and non-ending. This results in the dependency in aid from international agencies which gives the agency and its country more powerful. They can impose their own requirements for aid (Biggs et al., 2009). The need to control water from the colonial French regime is a way to exert power over Vietnam as its colony. The power was over the resources to increase the French profit and power over the land. This power dynamic is still visible today because of the instructional inertia in the Mekong Delta. The decision of the French in the past to rely on private contractors resulted in dependency on foreign aid. It is hard to detach from this dependency as the built landscape make it harder to change the current water resource management strategies. This is called a physical inertia. From the policy analysis it was visible that the measures in MDP follow the line of total control. It is only in Resolution 120 where this changes into living with water.

The reliance of Vietnam on international aid results in the international community holding a lot of power in policy making for the Mekong Delta (NL, #1). The power that the international community has is a form of financial control. Another form of

power from the international communities are in the form of appropriation of land and natural resources. This also goes back to the history of French colonisation in the Mekong Delta. With the physical occupation of the French, the exploitation of the resources started (Umans, 2022). The notion that certain part of the Mekong Delta were wastelands (Vo et al., 2019) by the French is already implying that land is only valuable if it has an economic output. The language of the Mekong Delta as under-utilised and a natural river, serves to partially eradicate the hidden transcript of unequal power relationships (Bakker, 1999). The need to increase agricultural productivity continued after the French colonisation. With the political reforms in 1986 came great environmental costs as water resources were degraded in order to achieve a higher agricultural productivity (Biggs et al., 2009). This is in line with the exploitation mentality. Resources are free to be occupied, drained and exploited while 'waster', an absence of resources, is free to be discharged (Umans, 2022). This is still visible in the views that saline water is a constraint that must be fixed instead of a resource (Biggs et al., 2009). This started to change from the MDP and Resolution 120.

#### THE STRUGGLE FOR THE CONTROL OF AUTHORITY

The need to control water and the need to fix the salinity 'problem' stems also from the colonial history and it is still visible today as the MARD has a preference of engineered solutions (Biggs et al., 2009). This gives international actors a justification to implementing their development goals in the Mekong Delta. With some international actors perceiving the delta as underdeveloped and having unused positional (Molle et al., 2009), it gives them power over the delta to 'fix these areas'. For example, in the MDP it is described that the rich natural resources of the delta are a foundation for a successful agricultural policy. The weakness is described as the vulnerability to flooding and salinity (Royal Haskoning DHV et al., 2013). The areas that are 'underdeveloped' and with salinity problems should be 'fixed' are appropriated with these engineered mechanical solutions. The current uses which are not in line with increasing economic activity are perceived as 'useless' and are erased. The optimisation of water use results in obscuring questions of equity of access, of control over prioritisation of projects and of spatial and temporal scales of development (Bakker, 1999). This is visible in the MDP where it is claimed that *"the competitiveness and prosperity of the delta depend very much on the efficiency and effectiveness of investments for flood protection, salinity control, water quality and fresh water supply."* (Royal Haskoning DHV et al., 2013, p. 14). With these engineered mechanical solutions, land and natural resources are appropriated for the pursue of economic growth. While this is in line with the struggle for the economic control, these measures are also an effort for the struggle for the control of authority. By making the Mekong Delta a space for development, those who want to implement their development goals are trying to get authority over the delta. Another way in how the need to control water stems from a colonial history is visible in the way that MONRE and MARD are clashing. MARD is an older ministry which is mainly concerned with agriculture and irrigation, something that was mainly established since the colonial times. Their mandate for agricultural development is rooted in the histories need to increase productivity. While both

parties are Vietnamese, the need to control water in the Mekong Delta is still in line with the struggle for control of authority.

#### THE CONTROL OF THE PUBLIC SPHERE

This was the only sphere which was not visible in this research

#### THE CONTROL OF KNOWLEDGE AND SUBJECTIVITY

Delta management practices responds to the negative impact that are left by delta exploitation practices and how these are exacerbated by climate change (Umans, 2022). Climate adaptation and dealing with climate change in general requires re-thinking the meaning of progress and development. It needs the mobilisation of many knowledges and knowers. Old relations require active nurturing and new relations between individuals, communities and countries needs to be nurtured (Hasan et al., 2021). The narrative of Dutch being experts in delta planning made it harder to use other processes of policy transfer such as cocreation, inspiration and mutual learning (Hasan et al., 2021). As it is mentioned before, many Vietnamese engineers and scientist in the water sector have some bond with the Netherlands. Some of them did their Master's or PhD in the Netherlands and most of them visited the Dutch Deltas to learn. When they bring this knowledge back to Vietnam, they have to adapt it to the local needs (VN, #2). Even though the Dutch government pays for the technologies, it's not a one-way traffic where Dutch companies brings in knowledge and technology. The Vietnamese and Dutch professional do learn from each other on an equal level (NL, #1). It is acknowledged by the Dutch that Vietnam has well-trained professional who have the capacity to take action without help from the outside but they are still dependent on foreign investment to finance the bigger projects. This need for foreign investments also brings in foreign experts (NL, #2). The power relationships are not dominated by the Netherlands even though they have money, but it is mentioned that they do have considerable soft power through knowledge (NL, #1).

The Dutch government in the Hague has put out a lot of promotional material where it says that the Dutch have a lot of water knowledge. Climate change adaptation is even perceived as an opportunity to present itself. This does hinder an equal relationship between the Netherlands and Vietnam. By arguing that the Netherlands is a frontrunner in delta planning for climate change adaptation, it is implied that their knowledge is better than the other countries it has partnership with. The promotional text different from what people do in practice as it does not give a right to the collegial and friendship relationship that already exist internationally by people who work in these countries for a longer time (NL, #2). These promotional texts imply a power difference in knowledge, and it hinders the existing relationship. These promotional texts indicate that the coloniality of knowledge is present in thinking of the Dutch government.

As one of world's top agricultural exporter, the MDP became an agricultural plan as it fits with within the Dutch picture. This is also the case for the Netherlands being a frontrunner in climate change adaptation. "The Netherlands project its own history and ideal on the Mekong Delta" (NL, #2). The Netherlands is mainly concerned with safety after the flood in 1953 .

When looking at the MDP it seems like all the development activities in the Mekong Delta are all in line with the MDP. This makes it seem like only the Dutch are doing work for climate change adaptation and sometimes with the help of some other international organisations. However, compared to Japan with JICA as one of the biggest investors in the Mekong Delta, the investments from the Dutch are small. The Dutch were mainly responsible for making the MDP. As it is mentioned before in the results, Japan invests a lot in Vietnam, and this also means that they have a lot of power and influence (VN, #1; VN, #2 NL, #2). Their focus in infrastructure and industrialisation and these efforts are not considered in the MDP. Most of the literature written by Japanese researchers on the Mekong Delta is in Japanese and not in English. Western literature often does not consider this literature. Because the Netherlands invested a lot of money into the MDP, this made a lot of Dutch researchers interested in this topic. Because Dutch researchers published a lot about the MDP, researchers from other countries were more inclined to write about the MDP too. When looking at Japanese literature, the Dutch efforts are barely recognised (NL, #2). So, it depends on the view on which development project is 'the centre of the world' (NL2). The master plans made by the Netherlands do not intend to exert superiority over Vietnamese knowledge. However, the history of international development in Vietnam makes it harder for power relations to be equal. This is exacerbated by the language of the Dutch promotional material. The naturalised norms in planning for climate change adaptation hinder a socially just delta planning in the Mekong Delta.

While there is growing evidence that climate change adaptation strategies need to consider a gendered approach to be effective, the MDP does not include this perspective. Nor is it considered a strategy for the most vulnerable group (Smajgl, n.d.). The historical distrust between farmers and the state is deep. Farmers are still not involved in water resource management in the Mekong Delta. Large projects are still conceived without their participation (Biggs et al., 2009). Another group that is not involved in the process of making the MDP are the ethnic minorities. Ethnic minorities are less represented in the government, so they have less say. This means that their experiences are erased (NL, #2). While for climate change adaptation strategies to be compatible with the local context must consider intersecting vulnerabilities, these vulnerabilities are not considered in the MDP (Ylipaa et al., 2019). The biases that are made about the vulnerability in climate adaptation strategies result in social inequalities reinforced on an intersectional level (Hackfort & Burchardt, 2018). The vision of commercial growth and modernity where the marginalised are not considered are framed by coloniality (Ba et al., 2018).

Lastly, table 14 shows the results of the discussion and if the following indicators of the Colonial Matrix of Power were visible or not.

Colonial matrix of power		
Sphere of operation and struggle	Indicators	Visible?
The struggle for the economic control	Appropriation of land and natural resources	Yes
	Exploitation of labour	Yes
	Financial control of indebted countries.	Yes

The struggle for the control of authority	Setting up political organisations	No
	Different forms of governmental, financial, and legal systems	Yes
	Installation of military bases	No
The control of the public sphere	Enforcement of the nuclear family	No
	Enforcement of normative sexuality	No
	Naturalisation of gender roles in relation to the system of authority and principles regulating economic practices	No
	Dual 'natural' gender norms	No
The control of knowledge and subjectivity	Through education	Yes
	Colonising existing knowledge	No
	The concept of the modern and Western subjectivity	Yes

**TABLE 14 RESULTS**

### DECOLONIAL THINKING IN THE FORM OF DELTA CARE

The MDP and the shift to delta management practices are still in lines with the rhetoric of progress where increased growth and consumption are equated to achieving equality (Kaijser & Kronsell, 2014; Tlostanova & Mignolo, 2009). While delta management practices do not perceive the resources of the delta as abundant and free to exploit (Umans, 2022), the goals are still to increase the economic value of the Mekong Delta. This means that coloniality remains as the desire to accumulate capital still exist (Tlostanova & Mignolo, 2009).

As it is described in the theoretical framework, the first step in decolonial thinking is to acknowledge the concepts of coloniality and the colonial matrix of power (CMP) and identify them. In this research the coloniality in planning for climate change adaptation is identified (Mignolo, 2021; Woons & Weier, 2017). From the last two sub chapters it is clear that delta exploitation and delta management are still rooted in the CMP. While delta management practices do take the natural system into account, the focus is still on agro-business investments. Coloniality will remain with the desire to accumulate capital (Tlostanova & Mignolo, 2009). Resolution 120 also acknowledges that intensive rice cultivation is not sustainable for the future and that the use of dikes and flood rises as a response to salinity is not always necessary anymore. The irrigation systems done by farmers themselves before the French colonization is an example of living with the delta. While there is acknowledged by Resolution 120 that farmers should 'live with the water' in the delta, training programs from the government for farmers are still focussed on agricultural production instead of climate change adaptation (Minkman et al., 2022). In the policy analysis it became clear that Resolution 120 is slowly moving towards a form of delta care. Traditional and cultural values are mentioned. The implementation of strategic delta plans depends on societal support and the uptake capacity of societal stakeholders in industry and agriculture, as well as consumers and citizens (Korbee et al., 2019). Is it is described before, not all citizens are considered in the MDP. Many people who live in the Mekong Delta rely on it for their livelihoods so they take care of the wellbeing of the delta.

### LIMITATIONS AND FURTHER RESEARCH

The implication of colonial history on delta planning for climate change adaptation where mainly investigated in the MDP and Resolution 120. As it is mentioned before, there is more development projects in the Mekong Delta. This research also mainly focussed on the current climate change adaptation plans from the Dutch. While it is found that these plans are implicated by the colonial history, further research on plans from other (International) donor/governments is needed to get a complete picture of delta planning in the Mekong Delta.

It is often mentioned that master plans for the delta do not include the local people. Further research on how coloniality influences climate adaptation by the local community would contribute to a broader picture of climate change adaptation in the Mekong Delta. Recommendation for further research for this is to do field research to see how it goes in practice.

### CONCLUDING REMARKS

The threat of climate change is an overarching social justice issue which should be understood in order to find a sustainable solution for everyone. The Mekong Delta in Vietnam is a waterscape that expresses the interactions between humans and the environment. The impacts of climate change are already visible in the Mekong Delta, and it threatens the rice production, which also threatens food security. Interventions are planned for the Mekong Delta to reduce the risks of climate change. This research looks into the history of interventions in the Mekong Delta and how it affects current planning for climate change adaptation. The focus is on the partnership of Vietnam with the Dutch for delta planning in climate change adaptation, and how the colonial history affects this.

The main question of this research is: *What is the colonial history of delta planning in Vietnam, and how is this history implicated in how professional communities plan for climate change adaptation?* By providing a historical context on the Mekong Delta, it was possible to gain a clearer view of the current 'barriers' for climate change adaptation in the Mekong Delta, which are presented in the Mekong Delta Plan and in Resolution 120. The colonisation of Vietnam by the French formally ended in 1954 but its effects are still visible today. The French colonisation resulted in the exploitation of the Mekong Delta. The involvement of the United States and the efforts to implement the TVA was an effort to increase the economic growth. This resulted in further control of the water in the Mekong Delta. The strategic partnership with the Dutch was a shift from delta exploitation to delta management. However, the language of the Dutch promotional text also implicates a superiority of knowledge like the interference of the French and the United States. The construction of infrastructure for rice production stems from the past and even interferes with the current efforts for agricultural diversification. The biggest trend that has become visible in this research is that the interference of the French, Americans and Dutch do have an implication on planning for climate change adaptation. The main way of delta planning remains delta management, where humans manage the Delta as a system. For a more socially just outcome of planning for climate change adaptation the delta has to be considered as a living body which should be taken care of.



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## APPENDIX

### APPENDIX 1

#### General

- Can you tell me what your job is and for who you work?
- Can you tell me how your work is related to climate change adaptation/delta planning?

#### Knowledge

- Where did you study and learn about climate change adaptation/delta planning?
- Do you take Vietnamese knowledge into consideration?

#### Power relations

- Where does the funding come from?
- Is there any international influence? If yes, how much?
- What is your relation with other actors/institutes/organisation?
- How was the collaboration between the Dutch and the Vietnamese?
- Did the Vietnamese want to

#### Delta planning/climate change adaptation

- What are the current plans for the Mekong Delta
- What is mandating, planning and funding these plans?
- What are the priorities in the Mekong Delta?
- Are the plans in line with what happens in reality?
- What are the biggest barriers?

#### Additional

- Do you have any documents which are relevant for my research?
- Do you know anyone else who I could contact for an interview?