Royal Netherlands Navy’s Future Fleet Capabilities: A Continuation of Rational Thinking

by

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August 2016

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Co-Examiner: Prof. Dr. P.C. van Fenema

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Royal Netherlands Navy’s Future Fleet Capabilities: A Continuation of Rational Thinking

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August 2016

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The views expressed in this thesis or those of the author and do not reflect the official policy or position of the Dutch Ministry of Defence or the Dutch Government.
ABSTRACT

This thesis presents fleet considerations and alternatives for the future composition of the Royal Netherlands Navy (RNLN). This is important because 80% of the Dutch fleet will reach their end of service life in the next two decades.

A framework for conceptual analysis was developed based on the Strategy Triangle consisting of goals, strategies, and capabilities. Bounded rationality was applied to analyse the NATO, EU, and Dutch maritime security strategies, and the thirteen semi-structured interviews with stakeholders and experts. The revaluation of the Rational Actor Model is supported. The value of the Span of Maritime Operations model for navies to explain their strategic utility is reconfirmed.

The research shows that all three naval roles (military, diplomatic, and constabulary) remain important. First, the RNLN is recommended to maintain the military role as primary tasking for the submarines and the large surface units. Second, to consider equipping the surface fleet with a crossover design. Third, to assign the constabulary role as primary tasking for the small surface units, to be equipped with a type of multipurpose coastguard vessel with military specific mission modules. Finally, in order to utilize the deepening cooperation between civilian and military organizations, the RNLN is advised to maximize its support towards both coastguard organizations within the Kingdom.
ABSTRACT (DUTCH)

Deze thesis presenteert overwegingen en alternatieven voor de toekomstige vlootsamenstelling van de Koninklijke Marine (KM). Dit is van belang omdat 80% van de Nederlandse vloot in de aankomende 20 jaar het einde van de levensduur bereikt.

Een raamwerk voor conceptuele analyse is ontwikkeld op basis van de Strategie Driehoek bestaande uit doeleinden, strategieën en capaciteiten. Beperkte rationaliteit werd toegepast voor het analyseren van de Navo, EU, en de Nederlandse maritieme veiligheid strategieën, en de dertien semigestructureerde interviews met belanghebbenden en experts. De herwaardering van het Rational Actor Model wordt ondersteund. De waarde van het Span of Maritime Operations model voor het uitleggen van de strategische waarde van marines wordt herbevestigd.

Het onderzoek toont aan dat alle drie maritieme rollen (militair, diplomatiek en rechtshandhaving) belangrijk blijven. Ten eerste wordt de KM aanbevolen de militaire rol (gevechtsoperaties) te handhaven als de primaire rol van de onderzeeboten en de grote bovenwatereenheden. Ten tweede, te overwegen de bovenwatervloot uit te rusten met een cross-over ontwerp. Ten derde, als primaire taak de rol van rechtshandhaving (veiligheidsoperaties) toewijzen aan de kleine bovenwatereenheden en deze uit te rusten met een multipurpose kustwachtschip met militair-specifieke missie modules. Ten slotte, om mee te liften op de diepgaandere samenwerking tussen civiele en militaire organisaties, wordt de KM geadviseerd de ondersteuning aan beide kustwachtorganisaties binnen het Koninkrijk te maximaliseren.
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<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>A2AD</td>
<td>Anti-Access/Anti-Denial</td>
</tr>
<tr>
<td>ADCF</td>
<td>Air Defence and Command Frigate</td>
</tr>
<tr>
<td>AGS</td>
<td>Alliance Ground System</td>
</tr>
<tr>
<td>AI</td>
<td>Artificial Intelligence</td>
</tr>
<tr>
<td>AIS</td>
<td>Automatic Identification System</td>
</tr>
<tr>
<td>AMS</td>
<td>Alliance Maritime Strategy</td>
</tr>
<tr>
<td>BMD</td>
<td>Ballistic Missile Defence</td>
</tr>
<tr>
<td>COTS</td>
<td>Commercial off the shelf</td>
</tr>
<tr>
<td>CSDP</td>
<td>Common Security and Defence Policy</td>
</tr>
<tr>
<td>DCS</td>
<td>Defence Cyber Strategy</td>
</tr>
<tr>
<td>DIS</td>
<td>Defence Industry Strategy</td>
</tr>
<tr>
<td>DOD</td>
<td>Department of Defence</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>EUMSS</td>
<td>European Union Maritime Security Strategy</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GNP</td>
<td>Gross National Product</td>
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<tr>
<td>HNLMS</td>
<td>His Netherlands Majesty’s Ship</td>
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<tr>
<td>ISS</td>
<td>International Security Strategy</td>
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<tr>
<td>MCM</td>
<td>Mine countermeasures</td>
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<tr>
<td>MOD</td>
<td>Ministry of Defence</td>
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<tr>
<td>NATO</td>
<td>North Atlantic Treaty Organization</td>
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<tr>
<td>NCSS</td>
<td>National Cyber Security Strategy</td>
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<tr>
<td>NCW</td>
<td>Network Centric Warfare</td>
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**NNEC NATO Network Enabled Capabilities**

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<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>NSS</td>
<td>National Security Strategy</td>
</tr>
<tr>
<td>OSCE</td>
<td>Organization for Security and Cooperation in Europe</td>
</tr>
<tr>
<td>RAM</td>
<td>Rational Actor Model</td>
</tr>
<tr>
<td>RN</td>
<td>Royal Navy</td>
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<tr>
<td>RNLMC</td>
<td>Royal Netherlands Marine Corps</td>
</tr>
<tr>
<td>RNLN</td>
<td>Royal Netherlands Navy</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>SLOC</td>
<td>Sea Lanes of Communication</td>
</tr>
<tr>
<td>TAXUD</td>
<td>Directorate-General Taxation and Customs Union</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>US</td>
<td>United States of America</td>
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<tr>
<td>WRR</td>
<td>Scientific Council for Government Policy</td>
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<td>WWI</td>
<td>World War I</td>
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<td>WWII</td>
<td>World War II</td>
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Finally, I would like to express my deepest love and affection to my wife and children. They had to endure my absence for many days and hours on end during these last two years. Especially when studying at our dinner table during all those evenings and weekends. I intend to make it up to you in the following years.
I. WHICH FUTURE FOR THE DUTCH NAVAL FLEET?

A. GOALS, STRATEGY, AND THE ROYAL NETHERLANDS NAVY

The last decade has seen a change within the international security environment. The global impact of the financial crisis, the increased tensions in the South China Sea caused by a more assertive China, the annexation of the Crimean by Russia, the civil war in the eastern Ukraine, the Internationalized armed conflict in Syria and Iraq, all have added to an even more diffuse and uncertain picture of international peace and security in a globalizing world. Some argue that the post-Cold War unipolar world, with the United States as the sole superpower, has seen a shift towards a multipolar world with renewed competition between Russia, China, and the United States (O'Rourke 2015, 4).

1. National Power, Sea Power, and Globalization

To exert influence in international relations, in general, every nation will strive to use all its resources, or national power, available to achieve its political, economic, financial, and diplomatic goals. Derived from a nation’s foreign and economic policies, as a part of national power, is a nation’s sea power. Sam Tangredi (2002, 3-4) defines modern sea power as ‘the combination of a nation-state’s capacity for international commerce and utilization of oceanic resources, with its ability to project military power into the sea, for the purposes of sea and area control over commerce and conflict, and from the sea, in order to influence events on land by means of naval forces’. Sea power in this broad definition is more than only naval ships and consists of a wide-scope of non-military maritime capabilities and commercial operations.

Globalization, as a phenomenon, is the process of increased interconnectivity between societies such that events in one part of the world or more have effects on people and societies far away (Baylis and Smith 1997, 7). But as a system it is also the dominant element of the current security environment (Tangredi 2002, xxv). The Netherlands is
strategically situated along the North Sea and with Rotterdam it has the largest port in Europe. As an open trading nation and the gateway to Europe it has built a strong global maritime position (Dutch Ministry of Infrastructure and Environment 2015, 6). History has shown that this strong maritime position and its subsequent sea power, which is ultimately about global trade, far exceeded the power of a continental state of comparable geographical size. Today, the Netherlands is still the sixth largest economy in Europe and number 28 globally (The CIA World Factbook 2015).

2. Function of the Royal Netherlands Navy

The Royal Netherlands Navy (RNLN) provides the naval component of Dutch sea power in support of the goals set forth by the Dutch government. According to the Dutch Scientific Council for Government Policy (WRR) these goals can and should be subdivided in vital national interests, extended national interests, and niches (2010). The supranational and national security strategies, national military strategy, policy papers, and the Dutch Maritime Strategy constitute the fundamental sources from which the goals or policy objectives of a Dutch naval strategy should be deducted. A naval strategy, formal or not, supports the national policy objectives with the application of a wide range of maritime tasks or operations. Ken Booth was one of the first to categorize these maritime operations in diplomatic, policing and military roles (Booth 1977, 15-16). The concept has been further developed and at present it is also known as the Triangle of Sea
Usage or Span of Maritime Operations\(^1\) as presented in the Australian Maritime Doctrine (Aus DoD 2000, 55-56). The capabilities to execute the naval strategy are the ships, submarines, aircraft, other types of equipment, and personnel of the Navy, Royal Netherlands Marine Corps\(^2\) (RNLMC), Royal Netherlands Air Force\(^3\), and Royal Netherlands Army.\(^4\)

**B. THE PROBLEM AND RESEARCH QUESTION**

1. **The fleet of the RNLN**

With the introduction of the Joint Support Ship, HNLMS Karel Doorman, the composition of the RNLN and the RNLMC, as envisioned in the 2005 Naval Study, was virtually completed. However, at the time of the introduction of the Holland-class Ocean-going Patrol Vessels\(^5\) between 2012 and 2013, other replacement programs, such as minehunters, M-frigates, submarines, and other auxiliary vessels, were delayed.

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\(^1\) Span of Maritime Operations: Maritime forces possess considerable utility in a wide range of situations that span not only the spectrum of conflict, but also much peaceful human activity. Contemporary strategic thinkers, notably Ken Booth, have suggested that the roles of maritime forces in this context fall into one of three categories: military (or combat related), diplomatic (or foreign policy related) and policing (or constabulary). In the Australian Joint Doctrine, the distinction is drawn between combat operations, military support operations and shaping activities. The ability of maritime forces to undertake constabulary and diplomatic operations depends substantially on their ability to carry out their combat roles. The capability to do these things is thus largely a by-product of the resources and core skills developed for warfighting.

\(^2\) Royal Netherlands Marine Corps (RNLMC) is mentioned separately although in fact it is an integral part of the RNLN. The RNLMC is specialized in special maritime operations, amphibious landings and expeditionary land operations with light infantry units. The RNLMC totals approx. 2300 men.

\(^3\) Royal Netherlands Air Force (RNLAF): operates all aircraft and helicopters within the Dutch Armed forces.

\(^4\) Royal Netherlands Army (RNLA): 103 ISTAR battalion operates UAV’s, which have been used in anti-piracy operations on board RNLN ships.

\(^5\) The (long range) patrol vessel were specifically designed for low-intensity coastguard style operations such as anti-piracy, anti-terrorism, and counterdrugs operations. For more on the Holland-class OPV see; https://www.defensie.nl/onderwerpen/materieel/inhoud/schepen/patrouilleschepen
Presently, the average age of the six remaining minehunters is between 25 and 30 years, the four submarines are over 20 years in service, and the same is true for the two remaining M-frigates. Naval ships are typically designed for a lifespan between 25 and 30 years before obsolescence issues significantly increase maintenance costs, decrease operational availability, and operational capability. Considering that the planning, designing, and building of new warships takes in between 10 to 15 years, these ships will go well beyond their designed life span. This problem is temporarily reduced by the implementation of life-extension programs, such as the submarine life-extension program, which is now underway with the first submarine just commenced with sea trials.

The planning for the replacement of these ships has only just started. The actual commissioning of the possible replacements will therefore not be earlier than the year 2025. At that time HNLMS Rotterdam (1997) is already approaching 30 years in service and the four Air Defence and Command Frigates (ADCF), commissioned between 2002-2005, are all over 20 years old. This results in the fact that in the next two decades 80% (22 of 27) of the present surface ships and submarines of the RNLN will reach their planned end of lifetime after more than 25 years of service (Karremans 2015).

2. Defence budget restraints

In a conventional ship-for-ship replacement program, the costs to replace all present ships and submarines of the RNLN will be in excess of 6.5 billion euros, but probably well over 10 billion euros.6 Considering the present annual defence budget (8.2 billion euros or 1.2% of the GDP) and an actual investment quote of only 14% in 2013 and 2014 (Dutch Court of Audit 2015), well below the required 20% (Dutch Court of

6 Author’s conservative estimate based on the procurement costs of the present ships and submarines of the RNLN and present budgets in the Defence Investment Plan for new procurements projects.
Audit 2013), such a defence-wide conventional replacement program requires a minimum structural budget increase of one billion euros (Volkskrant 2014).

Figure 1. Defence expenditures versus equipment expenditures 2015

[Image of Figure 1. Defence expenditures versus equipment expenditures 2015]

Source: NATO, Secretary-General Annual Report 2015

Figure 1. shows the actual expenditures and investments in 2015 within NATO for each member-state. Although the 2014 NATO Wales Summit Declaration (2014, 14) aims for countries to increase their defence spending to 2% of the GNP within the next decade, and a 20% expenditure on major weapons systems, actual implementation of this aim is a sovereign decision by each member-state. Even with a significant increase of the

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7 Gross National Product (GNP) is the market value of all the products and services produced in one year by labour and property supplied by the citizens of a country. (https://en.wikipedia.org/wiki/Gross_national_product)
present defence budget the one-for-one replacement seems to be unlikely considering the similar issues of the other armed Services. The sustainment of the armed forces in general, and the RNLN in particular, in its present state and size is under severe pressure.

3. Trends

The sustainment problem of the RNLN has been a result of delayed procurements in the past due to budget limitations. This does not take into consideration other effects of trends on the required capabilities of the RNLN. The world has changed and will continue to change. Geopolitical changes such as the rise of China and India, the resurrection of Russia, and the so-called “Europe’s ring of fire” on the southern and eastern flanks of Europe (The Economist 2014), has its impact on the economy, foreign policy, and the (perceived) national security. This puts the question forward what naval capabilities are necessary to optimize the support to the national (foreign) policy objectives?

In addition, technology is rapidly advancing. The so-called information revolution, which started in the early 1990s, is continuing. The impact of improvements has significant impact in civilian life. An example is the global growth of internet usage, which has grown from the start in 1995 until 2012 to approximately 2.5 billion users, or almost 36% of the earths human population\(^8\), and continuous to do so.

But this technological revolution also influences how the military operates. The U.S. naval concept of Network Centric Warfare (NCW) is a prime example how technology changes the way the military (will) operate(s). It supports the fundamental shift from platform-centric warfare to network-centric warfare as mentioned by then

\(^8\) According to the United Nations the seven billion human beings mark was reached on 31 October 2011, and according to the US Census Bureau on 12 March 2012. See http://www.worldometers.info/world-population/
Chief of Naval Operations Admiral Jay Johnson in 1997 (Cebrowski and Garstka 1998). Another example is tremendous acceleration of the use of unmanned systems in the military and civilian domain, ranging from miniature, man-portable systems to high-altitude long-endurance unmanned aerial vehicle’s. This raises questions on how technological developments and, more specifically as the RNLN operates in the maritime domain, the global maritime and naval trends will influence the required future capabilities of the RNLN?

4. Research question and objective

Since 9/11 the EU, NATO, and the Dutch government have released several maritime and security related strategies, which are of influence on the tasks and requirements expected from the RNLN. In almost the same timeframe Sam Tangredi (2002) and Norman Friedman (2008), two important maritime strategists, have identified several global maritime and naval trends. To date there has been limited scientific research on how these trends affect the future RNLN fleet capabilities to execute the ‘Span of Maritime Operations’ as required by the relevant supranational and Dutch maritime (security) strategies. In order to support the strategic discourse with regard to the future fleet capabilities of the RNLN this thesis answers the following research question:

How can the Royal Netherlands Navy’s future fleet capabilities address the challenges of the global maritime and naval trends to maximize support to the national policy objectives, now and in the near future?

C. PURPOSE AND SCOPE

The purpose of this thesis is to contribute to the decision-making with regard to the composition of the RNLN’s future fleet capabilities and requirements within the next two decades. It explores the present goals, strategies, and the impact of the global maritime and naval trends. Supported by this exploration this thesis presents fleet
considerations and alternatives in order to maximize the contribution of the RNLN, as an integral part of all national instruments\(^9\), in achieving the national policy objectives.

In addition, this thesis intends to contribute to a more in-depth and solid approach to the defence and naval replacement debate. In order to shift from a simplified one-for-one replacement to an approach which clearly explains the strategic utility of the navy and its naval assets, in the public debate in general, and its worth to the taxpayer’s money in particular.

D. TARGET AUDIENCE

This thesis targets four groups of people: Politicians, defence planners, academics, and the interested individual. Within a democratic country, such as the Netherlands, the armed forces are controlled by, and subjected to the elected civilian government. The armed forces are a means for the government to achieve the national policy objectives. It was Clausewitz who said, “War was a mere continuation of politics by other means”\(^10\). This is why it is also ultimately the responsibility of the government to sufficiently equip the military in order to be able to achieve the goals set forth by that same government. In order to make the best choices in providing its navy with the right capabilities, considering the limited available financial means, one should first answer the question how a nation intends to use the sea. This thesis intends to assist in that process.

\(^9\) The instruments of national power are: Diplomatic, economic, military, and informational instruments, (Dutch Ministry of Defence 2014, 68)

\(^{10}\) Clausewitz’s famous line that "War is a mere continuation of politics by other means," ("Der Krieg ist eine bloße Fortsetzung der Politik mit anderen Mitteln") while accurate as far as it goes, was not intended as a statement of fact. It is the antithesis in a dialectical argument whose thesis is the point – made earlier in the analysis – that "war is nothing but a duel [or wrestling match, a better translation of the German Zweikampf] on a larger scale." His synthesis, which resolves the deficiencies of these two bold statements, says that war is neither "nothing but" an act of brute force nor "merely" a rational act of politics or policy. This synthesis lies in his "fascinating trinity" [wunderliche Dreifaltigkeit]: a dynamic, inherently unstable interaction of the forces of violent emotion, chance, and rational calculation. (Bassford 2016)
Defence and naval planners have the difficult task of assessing what requirements are needed for the armed forces in future. They need to look into the future of an uncertain world when the drafting the initial requirements of new capabilities. For naval capabilities this process takes until the commission of a warship a minimum of 10 to 15 years. Subsequently this new capability probably has a life cycle of more than 30 years. A daunting task to look ahead for up to 50 years and provide the right capability.

Never forget the individual, including scholars, interested in strategy, security, the armed forces, and the navy. It is for the individual taxpayer, the ordinary citizen of the Netherlands that the armed forces provide the ultimate safety and security in order for society and its economy to develop and flourish. This subsequently provides the necessary means to pay for this safety and security. The expenditure of valuable taxpayer’s money should be focused on the right capabilities to support the national policy objectives. This all starts with a continuation of thinking and academics with regard to the strategic utility of a navy and the required capabilities to execute the naval strategy in support of the national policy objectives.

E. READING GUIDE

Following this chapter, the next chapter provides the theoretical background and framework for the analysis. Chapter three describes the methodology used and the justification of the applied research strategy and design. Chapter four provides an overview of the analysis of the maritime security strategies. Chapter five describes the stakeholder’s views based on the application of the framework for conceptual analysis provided in chapter two. Finally, in chapter six conclusions are drawn and some recommendations are provided.

A guide for readers considering a tactical reconnaissance, such readers should focus on the conclusions and recommendations. For an operational survey it is recommended to read in addition to the tactical reconnaissance the chapters two, four,
and five. Any person conducting a scholarly review should conduct a full strategic surveillance and read the entire thesis.
II. THEORETICAL FRAMEWORK

A. STRATEGY AND DECISION-MAKING

Strategy has been called many things by many people, including the highly influential ones, like Sun Tzu, Von Clausewitz, Von Moltke, Lidell Hart, and Mao. Strategy has been defined as the use of engagements, an art, a process, a plan of action, exercising power, a bridge, an overall plan, and a science, to mention just a few. Strategic thinking is also not only limited to the Western hemisphere. From the Western World, to Russia, the Middle East, to the Far East, people have studied and applied strategy (Gray, Baylis and Wirtz 2013, 4-5).

With the drafting of strategies, it has been argued, for instance by Bernard Brodie (1949), that strategy is too important to be left to generals. I support a more nuanced approach, like the one provided by Richard K. Betts, who suggested strategy should be developed by both political sensitive soldiers and military sensitive civilians (Gray, Baylis and Wirtz 2013, 6).

Within this thesis, as Mahnken (2013, 63) argued and in doing so acknowledging Von Clausewitz, strategy is considered a rational process. Strategy is an overall plan for utilising the (military) means or capabilities to achieve the political ends or goals. Strategy requires continued thinking, as it is a continuous loop (Liotta and Lloyd 2005, 122). Reflecting this continuous loop, the goals-strategy-capabilities relation can be illustrated as a revolving triangle, as shown in Figure 2. (Woudstra 2015, 5).
The above three elements to need be balanced to ultimately achieve the goals. With limited means or capabilities, the achievable national policy objectives need to be reduced accordingly as well. Similarly, a strategy cannot achieve anything without the allocation of sufficient means. The (nameless) arrows between the three elements illustrate the influence each individual element has upon the other two. Although the process is of the rational type this does not mean the possibilities within a strategy are unlimited. The range of strategic choices is constrained by material and political realities.

Based on the Strategy Triangle a framework for conceptual analysis has been further developed to act as a cornerstone for this thesis. The elements to be added to this framework represent the constraints by among others material and political realities. They consist of: types of national interest, maritime trends, naval trends, the ‘Span of Maritime Operations’, and the political and decision-making context. These will be discussed in detail in the following paragraphs.
B. TYPES OF NATIONAL INTEREST

In 2010 the Dutch Scientific Council for Government Policy (WRR) released a report called ‘Attached to the World: On the Anchoring and Strategy of Dutch Foreign Policy’ in order to contribute to a new orientation towards the outside world. The WRR describes that outside world as a hybrid one, in which the traditional geopolitics between nation-states co-exists with a globalizing ‘networked world’ of state and an increasing number of non-state actors. In the latter world, which has almost no borders, every organization, ministry, and agency has their own objectives in foreign affairs and this increasingly blurs the distinction between domestic and foreign policies (2010, 15).

In order to be successful in this hybrid world the WRR recommends two steps: (a) become aware and acknowledge that we live in this hybrid world; (b) making choices and setting priorities across the Dutch foreign policy as a whole. This is a political process, but a transparent deliberation framework should support this. Subsequently the WRR divides foreign policy into three categories: (1) vital national interests, (2) extended national interests, and (3) niches. First, ‘vital national interest’ that are indissoluble linked to the survival of the Netherlands, its people, and its territory. An example would be the need to strengthen the dikes and dunes within the Netherlands with rising sea levels. With vital interests there is no need to set priorities because they are of an existential nature.

Second, ‘extended national interests’ refers to those national interests which are very important to society but are not acutely and irrevocable at stake for maintaining and promoting security, prosperity, and welfare. This is where the Dutch government should prioritize. In other words, is the interest an actual national shared interest and is it really making a difference for the Netherlands? An additional criterion would be to what extent does the Netherlands share this interest with others. An example would be global warming and the subsequent rising sea level. The Netherlands should focus on those policy areas it shares with others, especially within the EU. Together the likelihood of
The Netherlands is so closely attached to the world, due to its dependence on the international trade and international legal order, achieving those extended national interests is more advantages than to almost any other country in the world (2010, 61-62).

The final category consists of ‘niches’ or policy areas in which the Netherlands wishes to make its presence felt in the longer term. The WRR argues that this is highly important. Because the total number of (global) policy areas is far too large to have a significant presence and influence everywhere (2010, 16-17). Niches arise from the chosen extended national interests and distinguish themselves on three grounds from other foreign policies: (1) Niches are instruments with which the Netherlands can particularly assert it selves in the international political arena. (2) More money is spent on niches than on other policy areas. (3) Niches are priorities for the long term (minimum over four years). The WRR provides three examples of possible niches for the Netherlands: Water and climate, food and sustainability, and international legal order. Figure 3, provides an order of priority between the different policy areas.

Figure 3. Typology of national interests

![Typology of national interests diagram]

Source: WRR (2010, 57) [Translated by author]
The three categories as presented by the WRR will be used to subdivide the national interests as distilled from the (inter) national maritime and security strategies. This subsequently provides a mechanism to determine priorities for the future capabilities for the RNLN.

C. MARITIME TRENDS IDENTIFIED

In *Globalization and Maritime Power* (2002), Sam Tangredi focuses on the effects of globalization on the maritime dimensions of trade, international affairs and off course navies. Globalization in this context is both seen as a process\(^1\) and as a system.\(^2\) He distinguishes seven different maritime related categories of effects. His goal is to translate general knowledge about globalization into the language of strategy and defence policy (Gaffney II, 2002, p. xvii). The seven categories are as follows.

1. Increasing nonstate and transnational threats to U.S. Security.

A clear example of this is global terrorism. Other threats include global crime, drug trafficking, illegal arms transfer, illegal immigration, and international corruption. U.S. borders are porous to certain of these threats. Simultaneously, these threats pose a potential to destabilize areas with which the US, but also European, economies are ever more interconnected. The challenges arising from this certainly have maritime dimensions. Similar to the U.S. this also applies to the European Union. The present influx of immigrants towards the EU, problems with foreign fighters, and transnational crime support this claim (Drent, Zandee and Hendriks 2015).

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\(^1\) Globalization (as a process): substantial expansion of cross-border networks and flows. Such flows may include the creation of global financial market, expansion of democratic governance, or increasing ubiquity of the Internet and other forms of communications via modern information technology (Tangredi 2002, xxiv).

\(^2\) Globalization (as a system): dominant element of the current security environment (Tangredi 2002, xxv).
(2) Increasing maritime traffic and trade.

Over eighty per cent of all global trade in volume is seaborne. An annual growth of the seaborne trade volume of approximately 2-3% annually is expected (UNCTAD 2015). This continuous growth of the seaborne trade raises concerns over the safety of the Sea Lines of Communication (SLOC’s) and of transits through chokepoints, such as Gibraltar, Malacca, Suez, Panama, Bab-El-Mandeb, and the Strait of Hormuz. These concerns range from the safety of navigation, environmental protection, to national security. With the spread of piracy and (global) terrorism, the security of the SLOCs and ports servicing international trade have become serious concerns.

(3) Increasing American concerns about economic security.

The concerns used to remain below the surface, but have now surfaced. Specific elements of such concerns point straight towards the impact of the first trend of increased nonstate and transnational threats. What will be the economic effects of terrorist attacks in general and against economic infrastructure in particular? Other concerns are related to previous trends and the threats against international shipping and the (mega-)ports supporting the international trade. General concerns focus more on the economic benefit from defence spending and the drag of this spending on the economy.

(4) Military (including naval/maritime) presence and intervention in locations not previously considered of vital interest.

With globalization, the interconnectness is present in the cascading effects of local and regional conflicts (Baylis and Smith 1997). Intervention to control and limit these conflicts could involve the entire range of instruments from political, economic, and financial support to the deployment of military forces in support of peacekeeping, peace enforcing, and direct intervention operations. For the U.S. with its broad range of national interests this may result in increased dedication of resources to future contingencies, likely this will be similar for the EU.
New and unpredicted effects of alliances and coalition-formation and their maritime components.

In the bipolar world of the Cold War, alliance behaviour was reasonably predictable. Within the unipolar world in the 1990s and early 2000s, coalition building, for instance in the *Global War on Terror*\(^{13}\), is different. It requires other means and methods. In a globalized world, naval cooperation by the forward presence of navies may take on a renewed role to provide and support political and economic stability.

Proliferation of information technology and high-technology sensors and systems.

Proliferation of commercial information and computer technology developments brings with it military applications for these means in sensors, intelligence gathering, surveillance, tracking and reconnaissance capabilities. Previously only available to the military, it is now readily available on the commercial market, such as satellite images, all kinds of data, global positioning equipment, and infrared cameras. The advancement in technology in the commercial sector and the usage this technology for military or terrorist purposes reduces the technological advantages and lead in military capabilities for Western nations.

Proliferation of advanced weapons systems and development of anti-access or area-denial strategies.

The proliferation of advanced weapon systems, such as nuclear, chemical, and biological weapon systems, and ballistic missiles, has become a widespread concern. The integration of such weapons with state-of-art IT and advanced sensors to create anti-

\(^{13}\) U.S. President George W. Bush first used the term "War on Terror" on 20 September 2001 (Bush 2001)
access and area denial (A2AD) weapon systems may represent the true globalization of high-tech military power.

D. NAVAL TRENDS IDENTIFIED

Norman Friedman (2008) identified seven global naval trends in ‘Some Global Naval Trends’, which was part of the end report of a conference on naval strategy held in Karlskrona (Sw) in 2008. The trends are primarily focussed on technological development or technological solutions in comparison with the maritime trends. All seven trends will be described in short.

(1) Effects of Moore’s law

The first and most important trend identified is the effect of Moore’s Law. The ‘law’ stems from around 1970. ‘The simplified version of this law states that processor speeds, or overall processing power for computers will double every two years’ (mooreslaw.org 2016). The term is not very popular within computer companies. But, the general rule still applies.

To Friedman, Moore’s Law primarily attacks the basis of stealth (2008). The development of sensors is improving rapidly and reduces the effectiveness of the ship’s designed stealth capability quickly, and well within the life span of a naval vessel. In 2016 the US Navy also recognized the importance of Moore’s Law for naval ship design. The future combatant design needs to be able to be more modular and adaptable to improving technologies (Majumdar 2016).

(2) Rise of manpower cost;

The second trend identified is the rise in manpower cost. This process is well known within at least Western navies. Within the Netherlands armed forces over half of the entire defence budget is spent on personnel costs, including salaries, pensions, and medical care (Dutch Ministry of Defence). These high manning costs make it difficult to
field large numbers of small vessels, including minehunters, minesweepers, landing craft, and other auxiliary vessels, which have been very important in previous expeditionary operations.\textsuperscript{14} Second, it limits sustained operations because the number of people on watch is limited. In addition, it would be more difficult to protect naval ships against irregular threats, such as pirates, terrorists, or swarming attacks by multiple small vessels.\textsuperscript{15} The solution applied thus far is significant and continued automation. Nowadays, unmanned systems are maturing rapidly and taking over more and more tasks of humans and manned systems, especially work which is generally considered dull, dirty, and/or dangerous. However, within the maritime domain arguments against automation are often that additional crewmen are necessary for damage control, and that minimum-crewed ships, due to their complexity, require higher percentage of officers and senior enlisted personnel, which increases the cost.

(3) Picture-centric warfare;

Nowadays almost all naval ships have a combat management system. The capability to share the picture compiled by every individual unit with a link system is a force multiplier, which cannot be underestimated. These shared tactical pictures provide the basis on which tactical decisions are made. In the 1990s this became known as Network Centric Warfare (NCW) (Cebrowski and Garstka 1998). NATO uses a concept, based on NCW, known as NATO Network Enabled Capability (NNEC). The intent is to

\textsuperscript{14} Operation NEPTUNE, the naval part of operation OVERLORD, supporting the Normandy Landings in June 1944 involved huge naval forces, including 6,939 vessels: 1,213 naval combat ships, 4,126 landing ships and landing craft, 736 auxiliary craft and 864 merchant vessels (D-Day Museum 2015). During Operation CHROMITE, better known as the landings at Inchon (Korea) in September 1950, the UN naval task force of CJTF-7 consisted of approximately 230 ships, including 120 transport ships of all sorts, and numerous merchants, including 34 Japanese vessels (US Army 1984).

\textsuperscript{15} Military swarming is often encountered in asymmetric warfare where opposing forces are not of the same size, or capacity. In such situations, swarming involves the use of a decentralized force against an opponent, in a manner that emphasizes mobility, communication, unit autonomy and coordination or synchronization (Edwards 2000).
leverage and improve the quantity and quality of information available to the war fighter-peacekeeper anytime, anywhere, and on demand (Moxley and Blackman 2005).

Key for Friedman is combining the pictures compiled at sea by naval units with fixed or national sensors (for instance satellites) via naval headquarters. This provides the opportunity to cover an increasing geographical area with the same, or even dwindling, number of assets.

(4) Increased value of passive survivability;

Considering the developments in the networked environment, the increasing range and precision of weapons, and reducing effectiveness of a ship’s stealth, the fourth trend identified is the increased value of a ship’s passive survivability. Especially in the littorals, or coastal areas, with its short sensing ranges and increased (civilian) shipping and aircraft density, the vulnerability of a surprise attack is much higher than on the open oceans.

Without passive survivability a ship needs to shoot-down any missile fired. With passive survivability the extreme need to deal with weapon saturation is reduced to more realistic numbers. This brings down the cost of naval warships significantly. Passive survivability also refers to ballistic protection to better deal with asymmetries, during low-intensity conflicts or constabulary operations against pirates, narcotics- and human traffickers.

Passive survivability normally means size, luckily bigger is not necessary more expensive. As important is the redundancy in the shipboard functions. This is normally achieved by duplication and dispersal of equipment. But also the developments of the all-electric ship, advanced damage control systems, and software developments, which do not require a traditional fixed location to display data and information, may provide new and improved opportunities to increase the passive survivability. Finally, Friedman argues that in ambiguous circumstances the commanding officer may be less prone to mistake when he or she is more confident in the capabilities and survivability the ship.
change in the application of sea power due to world political developments;

With the definition provided in chapter 1 the meaning of sea power remains a constant. However, the application of sea power changes with the changing geo-political circumstances. The world tends to continue with globalization, although scenarios that predict a temporary brake are also viable (Lloyd's Register Group 2015). With globalization the interdependencies increase and disruption of trade routes can cause severe impact on the linked global economies. At present there is a deep unrest in the Middle East ranging from Libya to Iran, but also the South China Sea is an area of increasing political tensions. Naval forces have valuable attributes such as being capable of sustaining themselves for prolonged periods offshore, and influencing events ashore without excessive political cost in comparison with the commitment of ground forces. This leads to a present expeditionary focus with regard to the deployment of navies.

Requirements and limitations in sustaining operations far from home;

With an expeditionary focus, ships require endurance and the sustainability to operate at range from shore-based logistical support facilities. Larger sized ships provide this ability to incorporate sufficient space to store fuel, food, spares, and ammunition. Simultaneously size also has positive impact on sea keeping performance in rough seas and the ability to maintain operational capability in adverse weather and sea conditions.

The sustainment of operations can be extended by the application of replenishment-at-sea. This allows expended fuel, gun ammunitions, food, and stores to be replaced whilst remaining on station. But this requires additional and specifically designed replenishment ships. An additional advantage of size is the space it provides to build-in redundancies in (critical) equipment. Redundancy enhances the integrity of the system by allowing it to adept and compensate for the shortcomings of its elements (Jones-Imhotep 2000, 153). Simply said, if a machine breaks-down the system continues to function and does not automatically lose its entire functionality. In broader sense this is
also applicable to the ships themselves. In order to keep one ship on station in the operations area, one normally requires a total four ships due to transit time, maintenance, recuperation, preparation, and training (Dutch Ministry of Defence 2010, 283). This “golden rule” shows that numbers count to sustain expeditionary operations.

For sustained combat operations the expenditure of weapons, missiles and ammunition has significant impact. Next to performance of weapons, sustained combat operations require large numbers of weapons and missiles that cannot be replenished at sea. Using the same launchers for surface-to-air missiles and land attack cruise missiles builds in some flexibility. But only guided munitions would provide an ability to sustain combat offshore. This is the main reason why surface ships all in all have a limited capability against shore targets.

(7) Requirement for large numbers of unmanned sensors and platforms for operations in the littorals.

As mentioned earlier in the littoral or coastal areas the performance and range of sensors are reduced. This increases the chance of success for a surprise attack by an enemy. To prevent this or decrease the enemy’s chance of success, the number of sensors needs to be significantly increased. Another problem in the littorals is the possibility of swarming attacks. Based on history the solution against swarming is a similar large number of small combatants, and mass numbers of sweepers and hunters against a mine threat, as was done in WWII. Nowadays it is impossible to field similar numbers of manned ships and specialized craft. Friedman’s solution to both problems is a mass of networked unattended sensors and autonomous vehicles.
E. THE SPAN OF MARITIME OPERATIONS

In 1977 Ken Booth posited in ‘Navies and Foreign Power’ (1977) a framework centred on the use of the sea in which the functions of a navy are divided in three roles: the military, diplomatic, and policing role. For Booth, a nation is interested in the use of the sea for three purposes: (1) for the passage of goods and people; (2) for the passage of military force for diplomatic purposes, or for use against targets on land or at sea; and (3) for the exploitation of resources in or under the sea. Navies exist as a means to achieve those goals. The Booth model, as shown in Figure 4, represents the trinity or unity of naval functions and shows the relationship between the maritime tasks and naval functions (Aus DoD 2000, 57).

Figure 4. The Booth model

![Booth model diagram]

Source: Navies and Foreign Policy (Booth 1977, 16)

The military role is deliberately chosen as the basis of this model. For the essence of navies is their military character (Booth, 16), and their ability to execute the other two roles depends substantially on their ability to carry out their combat roles (Aus DoD 2000). In the diplomatic role navies have the function of foreign policy instrument. The
goals can be to reassure and reinforce allied governments, deter potential aggressors, influence the decision-making process of foreign countries, and to improve national prestige. Or as Milan Vego (2013) stated: ‘In reality, during peacetime, no navy possesses sea control, but instead only exerts a certain degree of naval influence’.

In the policing or constabulary role, navies execute coastguard duties, like search and rescue and prevention of illegal immigration, support nation-building efforts, conducting operations ranging from peacekeeping to peace enforcement, and enforcing state, maritime, and international law by conducting counter-drugs and anti-piracy operations (Booth) (Aus DoD).

The significant difference between the military and constabulary activities is that the latter depends upon legitimacy derived from a legal domestic mandate or an internationally agreed order, while the former, whatever the degree of force implied, threatened or exercised, is defined primarily by the national interest (Seapower Centre - Australia 2004).

Eric Grove has further developed the trinity in ‘The Future of Sea Power’ (1990). Building upon this, the Australian Maritime Doctrine (2000, 55-56) provides a contemporary version of Booth’s model, see Figure 5. This framework, called ‘Span of Maritime Operations’, is used to translate naval roles into naval tasks required to achieve the national policy interests. The Netherlands maritime military doctrine ‘Fundamentals of Maritime Operations’ applies a similar version of the Booth model (2014, 316). Unfortunately, within this doctrine the model is not conceptually explained and lacks the background of the origins of the model.
In considering the trinity Booth (1977, 16-17) brings five points forward. First, a clear picture of warship functions should afford a basis for comparing and contrasting the naval efforts of different countries, and structure any discussion of the utility of navies. Second, some of the terms of analysis have various nuances, but semantic interpretation can result in limited confusion or discussion. Third, a degree of artificiality is unavoidable. This is especially the case in peace operations when one operation can serve
one or more objectives. Fourth, the presentation of functions as a trinity should not be taken to mean each part is of equal importance. Different states weigh the importance of each function in the light of their individual maritime problems and interests. Finally, the classification is not based upon abstract ideas, but upon an array of empirical evidence.

F. POLITICAL CONTEXT AND DECISION-MAKING

The political context and the decision-making process resulting in the future composition of the RNLN are not subject of this thesis. However, the framework for conceptual analysis provides and shows awareness that in reality this process is a complex combination of many factors. The political context is imbued throughout the entire process of establishing and defining policies, strategies, and in deciding on the acquisition of the actual defence capabilities.

In addition to more obvious factors of the political context, the defence budget and the Defence Industry Strategy, two seminal works are of significant importance and will also be addressed. First, the ‘Essence of Decision: Explaining the Cuban Missile Crisis’ by Allison and Zelikow, and second ‘Agendas, Alternatives, and Public Policies’ by J.W. Kingdon.

1. Three types of decision analysis models

In the seminal work 'Essence of Decision: Explaining the Cuban Missile Crisis' by Allison and Zelikow three decision analysis models are used. These three models are the Organizational Behaviour Model, the Governmental Politics Model, and the Rational Actor Model (RAM).

The Organizational Behaviour Model emerges from clusters of governmental organizations that look after their own best interests and follow 'standard operating procedures' (Jackson en Sorensen 2013). Governmental behaviour is less understood as deliberate choices and more as outputs of large organizations functioning according to
standard patterns of behaviour. Organizations do change, but learning occurs only after time. (Allison and Zelikow 1999, 143-144).

In the Governmental Politics or Bureaucratic Model, the state is not assessed as a single rational actor. It is a more refined view that sees a group of leaders on top of organizations all battling for more personal influence and power. ‘Like players who act in terms of no consistent set of strategic objectives but rather according to various conceptions of national, organizational, and personal goals; players who make government decisions not by a single, rational choice but by pulling and hauling that is politics’ (Allison and Zelikow 1999, 255).

RAM is based on rational choice theory. The model’s basic unit of analysis is the state. The contexts for analysis of the behaviour of a state are the international relations with other states. The core concepts of the rational action model are: goals and objectives, alternatives, consequences, and choice. The state is seen as a unified actor, capable of making rational consistent decisions. Such decisions are based on ranking of different options, within specific limitations. The selection of options is based upon value maximization (Allison and Zelikow 1999, 16-18).

Herbert Simon distinguished two types of rationality: comprehensive rationality and bounded rationality. Comprehensive rationality reviews all alternatives and all consequences in making the value-maximizing choice. Bounded rationality recognizes inescapable limitations of knowledge and computability of the agent. Thus all core concepts are further specified by further assumptions, or empirical evidence about the specific actor (1999, 19-20). This latter approach is used within the framework for conceptual analysis, as shown in Figure 7.

2. Multiple streams and the window of opportunity

J.W. Kingdon, in his highly influential ‘Agendas, Alternatives, and Public Policies’ (1995), identifies three processes for policy agenda-setting: problems, policies, and politics. First, problems points to the challenges of convincing policy decision
makers to focus on a particular problem instead of another. When a problem is seen as serious, the chances of a policy proposal rising on the agenda will improve significantly. In other words, problem recognition is essential. Within international affairs a more extreme version is called securitization. Second, policies are to provide the solution to a problem. But Kingdon focuses more on the processes by which different policies are generated, discussed, adapted, and accepted. The chance of success for a policy proposal increases if it is assessed as technically feasible, compatible with decision maker values, cost-effective, and appealing to the public. Finally, politics are political factors that influence agendas, such as changes in elected officials, political climate or mood, and the voices of advocacy or opposition groups (Coffman 2007).

These different independent streams almost act randomly, as shown in Figure 6. This is why these multiple streams are sometimes also represented as a garbage can, everything goes in and something comes out.

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16 Buzan, Waever and De Wilde from the Copenhagen School developed securitization, most importantly in ‘Security: A New Framework for Analysis’ (1998). An act of securitization is to convince an audience, by a securitization actor using an ‘speech-act’, of the existential nature of a threat. It removes a specific matter from the political process to the security agenda. Securitization can be seen as an extreme version of politicization (Emmers 2007).
In this organized anarchy the streams of problems, policies, and politics come together at certain critical times. Solutions become joined with problems, and both of them are joined to favourable political forces. This coupling is most likely when a policy window, or window of opportunity, is open (Kingdon 1995, 194).

For governments this problem is even more difficult because the participants within this policy-making process are from three distinctive camps with three different sets of problems, solutions and expectations. First, the electorate wants good schools, hospitals, roads, and other infrastructure and wants it immediately. The electorate needs are often immediate and of short-term duration, with voters tending not to look at the long-term picture. Second, the politician wanting to serve their constituents as well as possible with their primary focus on getting re-elected in four years. This focus makes their horizon medium term in duration, acknowledging their electorate’s needs while recognizing that a single term in office may not be sufficient to answer to those needs. Finally, the bureaucrat wants to execute their long-term strategic intentions without interference of the electorate or the politician. This reflects a long-term need, often seeing strategy in 20-year windows or longer (Tucker 2014).
3. **Defence budget and Defence Industry Strategy**

Two elements of this political context have impact on the rational analysis: (1) The defence budget, and (2) the national Defence Industry Strategy (DIS). First and foremost, the allocated resources for defence spending in the Netherlands in general, and naval spending in particular, are limited. In this case it is limited to the present defence budget with possibly a maximum increase to 2% of the GNP within 10 years.\(^{17}\) Dutch defence minister, Jeanine Hennis-Plasschaert, has asked for an initial budget increase of two billion euros to meet the present NATO-spending average of 1.43% of the GNP (Sedee 2016). The already limited resources require strategic choices within the defence procurement process.

Second, these defence procurement choices are also influenced by the DIS released in 2007 by the Ministries of Defence and Economic Affairs. The DIS is an integral strategic vision for Dutch defence related industries. It states particular areas of technology development in which the Dutch defence related industries can excel to improve their position on the European markets (Dutch Ministry of Defence and Ministry of Economic Affairs 2007). The security strategies, the DIS, and present defence budgets are already results of a combination of the different decision-making processes, multiple streams and windows of opportunity.

**G. FRAMEWORK FOR CONCEPTUAL ANALYSIS**

This thesis intends to deduce the required naval capabilities from the national policy interests and the present maritime and security strategies. The *Strategy Triangle*, as explained earlier, is used as the basis of the framework. Because the available resources will never be enough to deal with all threats and risks, strategic decisions will

\(^{17}\) In accordance with the NATO Wales Summit Declaration released on 5 September 2014 pt 14. See http://www.nato.int/cps/en/natohq/official_texts_112964.htm
have to be made. This is why strategies are the most important guide to sound force planning (Liotta and Lloyd 2005, 125). The present maritime security strategies are to provide this necessary focus within the national policy objectives to be achieved by the available capabilities.

A nation’s goals are distilled from its national interests. Navies need to support the achievement of these national goals. In order to prioritize between these national goals, due to limited available resources, they can be subdivided in vital, extended national interests, and niches. This is shown on top of the triangle.

Geoffrey Till, an important contemporary naval strategist, stated: ‘Planning for navies calls for a constant thought and constant adaptation to changing circumstances’ (2013, 348). These changing circumstances therefor needed to be addressed in this thesis. Circumstances are influenced by external and internal factors and trends. External influences are reflected by the global maritime trends caused by globalization and technological developments that mainly affect the goals-strategies relation. Similarly, naval trends reflect the external influence upon the relation between strategies and required capabilities.

The decision-making theories discussed provide different lenses that can be used to look at, or focus on specific parts of, the framework of conceptual analysis. With the lens of the bounded rationality approach of this thesis the internal influences or political context, to limit the scale of this research, are not part of this thesis research. In order to provide the awareness of this research limitation the political context is reflected in the framework to the right of the ‘triangle’ between goals and capabilities.
Finally, the ‘Span of Maritime Operations’, centred in the middle of the framework. It supports the translation of the three naval roles to more specific naval tasks to be executed by naval forces, see Figure 5, and to maintain a functional approach to the analysis of the required capabilities of such naval forces. In support of the conceptual analysis framework a functional approach has several advantages. First, it provides the ability to concentrate on policy objectives and encourages the rational selection of the resources to be allocated to naval forces. In addition, it helps to establish tactical and financial priorities, and it ensures to focus on the whole instead of individual parts. Finally, by clarifying why navies exist, a more sensibly discussion can be conducted with regard to the array of strategies and tactics that navies adopt (Booth 1977, 24).
As a last remark, the presented framework is a tool. It tries to conceptualize reality to support the analysis. However, in reality the boundaries as shown in the framework are not absolute and far less distinct.
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III. METHODOLOGY AND RESEARCH STRATEGY

To answer the research question, a research design is developed. Figure 8 provides a schematic overview of the research design.

Figure 8. Research Design

In this paragraph I will justify the methodology used to answer the research question, related central questions and sub-questions. This justification will be done via four sub-fields: (1) the research strategy, (2) data collection and sample strategy, (3) data analysis, and (4) research quality indicators.
1. Research strategy

To select a suitable research strategy Yin provides relevant situations for the five research strategies (2014, 5). Considering the form of the research question, the lack of control over the behavioural events or over any of the elements within the framework for conceptual analysis, the explicit focus on the contemporary RNLN and its future fleet capabilities, the present maritime security strategies, and the global maritime and naval trends, I have selected the case study as the most suitable research strategy.

In addition, this thesis is a kind of perspective or ex-ante policy evaluation. Evaluation seen as a process that systematically and as objectively as possible determines the relevance, effectiveness, and efficiency of an activity in support of its objectives. Contrary to retrospective (ex-poste), by assessing past policies, and current policy evaluation, by monitoring present activities, this policy evaluation focuses on the anticipated impact of future planning of governmental policy. The role of ex ante evaluation is to provide information to guide resource allocation and a more strategic decision process (Papaconstantinou and Polt 1997). In this particular case, the future decisions on which capabilities to acquire within the next two decades for the RNLN.

2. Data collection and sample strategy

For this ex-ante policy evaluation case study, a mixed-method, which uses both quantitative and qualitative data and methods, has been applied. Based on a literature review the relevant maritime security strategies, maritime, and naval trends with a

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18 The major five strategies for doing social science research are survey, experiments, histories, archival analysis, and the case study. Each method has its own advantages and disadvantages. Robert K. Yin (2014, 4) states three conditions for selecting the best suited strategies: (1) the type of research question posed, (2) the control an investigator has over actual behavioural events, and (3) the degree of focus on contemporary as opposed to historical phenomena.
probable impact on the future fleet requirements of the RNLN were selected for a qualitative analysis using the framework for conceptual analysis, as shown in Figure 7.

The Dutch Maritime Strategy 2015-2025 supports the selection of strategies and policy notes that are analysed. At the same time, it is indicated that internal and external security are increasingly intertwined with one another (Scientific Council for Government Policy 2010). As such, the relevance and impact of internal state security strategies are becoming more and more relevant for the Dutch armed forces, including the RNLN. For this reason, the (Dutch) National Security Strategy is also included.

For quantitative data selection thirteen semi-structured interviews were conducted with stakeholders and experts. These interviews, which lasted between one to two hours each, were conducted in order to crosscheck, strengthen, enrich, and further develop my initial analyses. The selection of interviewees was determined in order to achieve a balanced participation of (maritime) security stakeholders and experts with a direct linkage to the drafting of the reviewed strategies and/or the related future fleet capabilities.

The interviewees consisted of (former) members and representatives from the ministries of Defence, Justice and Security, and Foreign Affairs, the Netherlands Defence Academy, knowledge and research institute TNO, The Hague Centre for Security Studies, Clingendael Institute for International Relations, and from naval industry. Six of the interviewees are active naval officers, two interviewees are also former naval officers, one interviewee is an active army officer, three interviewees are primarily scholars, and one interviewee is an active army officer, three interviewees are primarily scholars, and

two are civil servants. Although all conversations were conducted in confidentiality, and the names of interviewees are withheld by mutual agreement, a more detailed background of each of the interviewees can be found in Appendix A. Record-topic matrix

3. Data analysis

In order to draw conclusions from the data gathered, this data needs to be analysed. The defence procurement process can be seen as a combination of rational, organizational, and political processes as explained in chapter 2. However, considering the three models, a more rational analysis or Clausewitzian approach²⁰ (Mahnken 2013) was applied to analyse the RNLN’s future fleet capabilities from the gathered data. The actual process of establishing the requirements within the RNLN for the future fleet capabilities would be an interesting object of analysis using the second model. Analyses of the final choices in the political process of actual defence procurements are probably best explained using the third model.

Using a number of analysis techniques, the data were analysed. First, the content of the different strategies and policy notes was analysed using content analysis to provide a contextualized interpretation and a measure of systematics in the analyses. The framework provided by the WRR was used to categorize the different goals of the Dutch government. Finally, for a strategy to be complete the goals, ways and means all need to be addressed, is this done in the analysed strategies?

Second, to minimize the disadvantages of content analysis the authenticity, credibility, and representativeness of the documents analysed was of importance. As such the governmental documents supported this based on the reliable reputation of the Dutch

²⁰ Clausewitz: ‘No one starts a war—or rather, no one in his senses ought to do so—without first being clear in his mind what he intends to achieve by that war and how he intends to conduct it’ (Clausewitz 1989, 579). Supporting quotation for strategy as a rational process (Mahnken 2013, 63)
government, NATO, and the EU. International recognized scholars have written all the scholarly articles, books, and reports used on the subject of (maritime) strategy or articles advised by such scholars. When possible secondary literature (reviews of others) were used to support and/or challenge my own initial analysis.

Third, my own analysis was elaborated, challenged, assessed, and/or validated, as perceived by relevant stakeholders and experts, using semi-structured interviews. To support the (qualitative) data selection, the interviews are coded in a ‘record-topic’-matrix, provided in appendix A. The record (R1-Rn) represents each interviewee and the topic (T1-Tn) points to the core answer (and quotes used identified by ‘*’ added) to each of the questions of the semi-structured interviews.

The quotes used in this thesis are primarily used to illustrate both the justifications and rebuttals of the core arguments. In addition to the quotes used, the number of quotes and core answers used from each of the interviewees were put into a frequency table in order to provide insight, to prevent unintentional bias and/or identify significant deviations of the variables. Because of the relatively limited number of interviewees significant deviations in the core answers are difficult to identify, together they more or less draft the whole picture.

Finally, based on my initial research results a vignette methodology was used in the majority of interviews. A vignette presents a hypothetical situation, in this case hypothetical fleet compositions, to which the interviewees respond thereby revealing their perceptions, values, social norms or impressions. The vignettes used are provided in appendix C.

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21 Due to lack of time four interviewees were unable to answer this question. These four were representatives from the MoD/DPLAN (R9), ministry of Security and Justice (R11), ministry of Foreign Affairs (R12), and the NATO/EU (R13).
4. **Research quality indicators**

In order to support the quality of the research three steps were taken. First, as a basis primarily open source (supra-) governmental notes, strategies and scholarly publications were used. Information based on classified materiel or insider-knowledge were only used when this was confirmed or supported by open source literature and/or in the interviews.

Second, the reliability of the data and analysis is increased with the application of semi-structured interviews. The interviews were all digitally recorded and subsequently summarised in writing with the central tendencies and relevant quotations supporting these tendencies. The reliability of the interviews was further enhanced by a so-called member-check. This procedure entailed presenting the summary to the interviewee for his or her authorization, any remarks were amended. All recordings, summaries, and authorizations of each interview are in my personal archive. In addition, the use of a data-matrix and frequency table further supported the research quality.

Finally, with regard to generalizations in support of my research design, I argue that the case of the RNLN is on the one hand the specific case of RNLN in the present social-economic and security constellation. On the other hand, the Netherlands is a small to medium-sized, open, democratic, postmodern, trading nation, part of international organizations such as the EU and NATO, with a significant interest in the maritime domain. The maritime and naval trends used in this thesis do not specifically apply to the Netherlands only. On the contrary, they have a global effect. As such there are many more nations across the world with similar strategic challenges and interests who are looking at the future fleet capabilities of their navies. However, each country also has its own specific naval procurement contexts and as such could reach different strategic choices based on similar strategic thinking.
IV. CONTENT RESULTS STRATEGY ANALYSIS

The first step in order to establish the goals or national policy objectives and the naval capability requirements for the Netherlands, is an analysis of the relevant international and national maritime and security strategies. To support the readability of this thesis this chapter only presents an overview of the analysis of NATO’s *Alliance Maritime Strategy*, the *European Union Maritime Security Strategy*, the *National Security Strategy*, the *International Security Strategy*, the policy note ‘*In the Interest of the Netherlands*’, and the *Dutch Maritime Strategy 2015-2025*. The detailed analysis of each individual strategy is provided in Appendix E. Analysis of Maritime Strategies.

1. Strategic concepts, not true strategies

The EU, NATO, and national maritime security strategies do not meet the criteria of being true strategies by generally lacking the means or capabilities to achieve the goals set forth in the respective strategies. All documents, except for the policy note, ‘*In the Interest of the Netherlands*’, are high-level strategic concepts. More like a vision statement to guide or foster change, rather than a true strategy (Work and van Tol 2008, 5). Such concepts often deliberately leave voids for more detailed national policies and requirements (Dutch Ministry of the Interior 2007, 24).

The policy note, ‘*In the Interest of the Netherlands*’, recognizes the imbalance between financial resources allocated on the one hand, and the goals and the increased threats to the interest of the Netherlands in an increasingly unstable international security environment on the other hand. The policy note intended to close this gap by reducing the ambitions instead of increasing the funding. For the armed forces this meant that all capabilities would be maintained but in fewer numbers and subsequently the sustainment of these capabilities would be reduced. However, the Dutch Court of Audit [Algemene Rekenkamer] has found that this gap still exists (2013, 26). This will result in further
reductions in the capabilities and/or sustainability when the financial resources are not significantly increased up to 1.1 billion euros.\textsuperscript{22}

2. Division of national interests

The recommended division of national interest by the WRR are only partly followed by the ISS and the MoD’s policy-note. The ISS identifies three strategic interests. As such it does not use the same wording as the WRR. Second, the strategic interests are not subdivided in vital and extended national interests. However, in line with the recommendation the ISS does focus its efforts in the foreign policy domain. The MoD’s policy note divides the capabilities of the armed forces, into basic capabilities and niches. Unfortunately, a more in-depth and elaborate explanations why specific capabilities are basic, niches, and for instance not both, are absent. A clear comprehensive overview of the division of all capabilities is also lacking. Several interviewees have also said that the strict division between basic capabilities (‘\textit{need to have}’) and niches (‘\textit{nice to have}’) will be abandoned, and niche capabilities are more positioned as a NATO/EU capability shortfall. However, based on the analysis of the strategies a division of vital national interests, extended national interests and niches can be distinguished, as shown in Figure 9.

\textsuperscript{22} A structural increase of 400 million euros or 5\% of the present annual budget is required to achieve the 20\% investment quote. This is based on the Defence investment plan in which 18 billion euro of investments is scheduled for the next 15 years (Dutch Court of Audit 2013, 16). This does not incorporate inflation costs, discussions about the sufficient allocation of resources to maintain the present numbers and quality of materiel, and financial shortages of the material and personnel exploitation. This would amount to approximately 1.1 billion euros according to interviewee R9, a representative of the MoD Directorate of Plans.
The vital national interests originate from the NSS and the ISS. Clustered next to these vital national interests are the extended national interests that originate mainly from the AMS and the EUMSS. The clustering should be seen as those interests that have the most commonalities with one another and the vital national interests. This is not meant to be absolute. Supported by Van Wijk and Toxopeus (2005, 422) and Verhagen (2008), the promotion of international order, a strategic interest in accordance with the ISS, is

### Table: Vital National Interests, Extended National Interests, and Niches

<table>
<thead>
<tr>
<th>Vital National Interests</th>
<th>Extended National Interests</th>
<th>Niches</th>
</tr>
</thead>
<tbody>
<tr>
<td>National territorial security</td>
<td>Security of the EU, and deterrence &amp; collective defence of NATO territory</td>
<td>More responsibility for Europe</td>
</tr>
<tr>
<td>National physical security</td>
<td>Preservation of peace (EU), cooperative security (NATO), and promotion of international order (ISS)</td>
<td>Unstable regions near Europe</td>
</tr>
<tr>
<td>National economic security</td>
<td>Protection of economic interest</td>
<td>Disarmament &amp; arms control</td>
</tr>
<tr>
<td>National ecological security</td>
<td>Protection environment and climate change</td>
<td>Cooperation private sector</td>
</tr>
<tr>
<td>National social and political stability</td>
<td>Effective management of maritime borders and maritime areas (EU), and crisis management (NATO)</td>
<td>Integrated approach</td>
</tr>
</tbody>
</table>

Source: author, from analysed strategies
assessed as a policy instrument and moral guidance that supports the broad range of Dutch national interests and is not a vital or extended national interest in itself (Klem 2010, 65). The niches are the focus areas distilled from the ISS and the sequence is independent from the other two columns.

3. Maritime and naval trends

All maritime trends as described in chapter 2 are generally speaking recognized within the different security strategies. Although in the NSS the emphasis on the maritime domain is limited. In addition, cyber security and cyber operations have been recognized as a trend with increasing impact, as an opportunity as well as a risk or threat, across all domains including the maritime domain. Cyber operations or more specifically, offensive cyber operations are at present the responsibility of the Dutch Defence Cyber Command under the administrative control of the RNLA. For the RNLN the primary focus for the time being should be on the cyber security paradigm with regard to their processes, support and operational systems, and operations.

Another maritime (or naval) trend is the requirement of further deepening of cooperation between navies, civilian authorities, and nongovernmental organizations to combat the increasingly different types of maritime threats and risks identified by the different strategies, in particular the EUMSS. This requires the continued improvement of interoperability and coordination between all these different national and international organizations.

Regarding the naval trends, the analysed strategies do not always provide a direct link. Some trends can more or less be deduced. The high-level approach of these strategies is a reason for the absence of some of the naval trends. Primarily the NATO, EU, and the policy note underscore the importance of an expeditionary focus, being able to sustain those operations, and the central starting point of picture-centric warfare or maritime awareness in maritime and naval operations. In addition, the policy note,
although not specifically linked to the naval domain, confirms the trend of reducing
number of personnel and the increase of the use of unmanned vehicles and sensors.

4. Naval functions

The naval functions as presented in the ‘Span of Maritime Operations’ are not
specifically referred to within the analysed documents. The MoD’s policy note refers to a
different model that consists of seven strategic functions. However, the naval functions
can be rather easily identified within the documents. Especially when looking at the tasks
which originate from the three naval functions. With the exception of the NATO strategy,
which also explicitly includes nuclear deterrence, the EU, ISS, the MoD’s policy note,
and the DMS, stipulate without any emphasis the necessity of naval forces being able to
conduct the full range of (conventional) naval functions, tasks and operations. The
EUMSS elaborates more on the diplomatic and constabulary role and the AMS more on
the military role. Considering the origins and nature of both organizations and the policy
instruments available to each organization this is hardly surprising. With the changing
geopolitical context, more specifically the renewed assertive stance of Russia, the
successors of these strategies will probably put much more emphasis on the deterrence
and crisis management. An example is the release of an update of the ISS via the policy
brief ‘Turbulent Times in an Unstable World’ (Dutch Ministry of Foreign Affairs 2014).
It focuses on the most relevant developments in the international security environment,
the new security threats, and the additional consequences for the Netherlands.

23 The seven strategic functions are: Anticipation, Prevention, Deterrence, Protection, Intervention,
Stabilization, Normalization (Dutch Ministry of Defence 2013, 37)

24 The Dutch Maritime Strategy 2015-2025 does so by referring to the other mentioned strategies
(2015, 24).
5. **Requirements of naval forces**

In short, from an international perspective and acknowledged within the national documents, the present and future maritime forces and naval capabilities need to be able to execute all three naval roles. These maritime forces need to be capable, flexible, deployable, interoperable and sustainable. The importance of maritime awareness, surveillance, and information sharing with both national and international military, other governmental, and non-governmental organizations will only increase. The development of new capabilities should be supported by among others the application of dual-use technologies, standardisation, and certification, in order to achieve and maintain interoperability between all actors involved.
V. STAKEHOLDER’S VIEWS ON FUTURE RNLN FLEET

A. POLITICAL CONTEXT

In order to limit the scope of this thesis the Rational Actor Model is used in analysing the future capabilities of the Royal Netherlands Navy (RNLN). This deliberately disregards two other possibilities provided by Allison (1999), the Organizational Behaviour Model and Governmental Political Model, and the model of Multiple Streams and the Window of Opportunity as explained by Kingdon (1995). For this reason, the political strategic decision-making environment or context is not investigated in-depth. However, this context is important and not addressing it at all would be a serious flaw. So what is the political strategic decision-making context?

1. MoD Budget

Generally speaking, all interviewees agree that the allocated budget for Defence has the largest influence. Within the ministry of Defence most people expect or hope for a significant increase in the Defence budget. Not increasing the budget would result in a need to reduce the total capabilities of the armed forces with approximately 20% in order to achieve financial durability.25 This in turn could have above average effects on the RNLN. As one of the representatives from the MoD’s Directorate of Plans said: ‘It does not help then, that you’re on the eve of large investments and those are all mainly within the maritime domain’.26 Within the MoD there is hope for an increase of the defence budget. This is illustrated by the RNLN’s representative who said: ‘The hope of [Ministry of] Defence is that the Netherlands finally does what is has committed itself to do and

25 Based on interview with R9
26 Quote R9
organize a military that fulfils the 2% GNP-guideline’.27 However, outside the MoD the expectations of this increase are significantly lower, and suggest only a marginal increase. Or as the representative from the ministry of Security and Justice said: ‘I expect there will be no additional funding, it would surprise me’.28

2. General Elections and Strategic thinking

Key to significant budget changes are the general elections to be held in March 2017. Depending on the results of this election, normally by coalition of political parties, a Coalition Agreement will be drawn up in which the goals, budgets, and responsibilities are determined for the next four years. It is important for the MoD, the defence-industry, and the RNLN, to make its case within the broad spectrum of political parties and their respective election programs. An example of this course of action is the expected release of the new national security strategy before the elections in order to better facilitate the political decision making by bringing together the security domain and the political domain.29

The call for a long-term investment plan or ‘White paper’30 for the armed forces is getting stronger. Representatives from labour unions, defence associations, defence and security industry, and others all call for a ‘Delta plan’31 for the armed forces.32 One of

27 Quote R3
28 Quote R11
29 Based on interview with R11
30 A white paper is an authoritative report or guide that informs readers concisely about complex issue and presents the issuing body’s philosophy on the matter. Many point to the Churchill White Paper of 1922 as the earliest well-known example. The term is derived from the colour of the document’s cover.
31 ‘Delta plan’ is the original infrastructural plan of the Delta Works to safeguard the Netherlands against flooding. It was initiated after the major flood in 1953. Within Dutch society a ‘Delta plan’ is synonymous with a large, expensive, long term plan of which the authors argue it is of critical importance to the survival of the State and its society.
the problems identified is the mismatch between the long term defence investments and planning requirements on the one hand. On the other hand, the shorter term or current event focus of politicians, who want to be re-elected every four years. Sometimes Dutch politicians are accused of having a lack of strategic thinking or strategic mind set. ‘Current events are crucial and dominate politics, that is eventually the level at which the choices are made. Due to the political system that we have, those [politicians] are less inclined to medium and long-term thinking’. Or somewhat bolder stated: ‘The Netherlands suffers from strategic poverty, we are very poor in strategic thinking’. This is the challenge of Kingdon’s multiple streams and the added difficulty within governments as mentioned earlier. The MoD is slowly moving towards a position of strategic thought leadership within the entire government. Not because the MoD deliberately wants too, but because other ministries at present are not focused on strategic thinking. In other words, ‘In the land of the blind the one-eyed man is king’. Others refer to the political or common interests, the political return on investments, interests and influence of the defence industry, including the research institutes, the reduced influence of individual armed services, and the international context, such as the 2014 Wales Summit Declaration.

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33 Quote by R6

34 Quote by R2

35 See paragraph II.F.2.

36 Based on interview with R2 and R7, Quote by R7

37 Based on interview with R3, R4, R7, R8, R9, R10.
3. **Triple Helix, Innovation, and DIS**

The cooperation between the armed forces, defence and security industry, and R&D institutes is called the ‘*Gouden Driehoek*’ in Dutch or ‘*Triple Helix*’ in English. It is argued that this cooperation is of fundamental importance to the RNLN, much more profound than for the other armed Services\(^{38}\), because the Dutch naval platforms are not commercial or military of the shelf products. The intent is a continuous improvement program in which operational feedback is incorporated in the next designs. This puts the RNLN platforms a generation ahead of other naval designs or at half the price for similar naval designs.\(^{39}\) As a senior policy advisor put it: ‘*The unique selling point of the RNLN is in fact the ability to produce [very desirable] pre-owned frigates, nobody else can do this*’.\(^{40}\) Operating state-of-the-art frigates for a few years and subsequently selling such proven sought-after second-hand frigates could provide a significant return on investments and reduction of the total cost of ownership.

Contrary to this line of thinking is that investing in innovation on a specific subarea, for instance radar systems, possibly results in losing military capacities within a larger scope and can preclude a broader focus based on a broader MoD interest. As a naval officer with an R&D background argued: ‘*In my opinion there is tension between the present DIS and the present Golden Triangle, ..., on the one hand. [And] on the other hand, as the MoD, I want the largest numbers, of the best kit, for the least amount of money*’.\(^{41}\) An example would be the Ocean-going Patrol Vessels with the best sensors available, which left no budget for air warfare weapon systems.\(^{42}\) Another point is the

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\(^{38}\) Based on interview with R10.

\(^{39}\) Based on interview with R10

\(^{40}\) Quote R7

\(^{41}\) Quote R1

\(^{42}\) Based on interview with R1
general policy of the MoD. ‘Buying off the shelf is the starting point in acquiring material, only in exceptional cases the Ministry of Defence will participate in the development and or integration of new systems’ (Dutch Ministry of Defence, 10).

In addition, the timeframe for implementing innovations is considered to take longer for the RNLN than for instance the RNLA. According to a R&D expert the maritime domain seems less prone to short-term innovation than the land domain due to a reduced presence of asymmetric threats.43 Fast tracking the procurement of 25 Bushmaster vehicles, which were more resilient to improvised explosive devices, in 2006 for operations in Afghanistan is a prime example (House of Representatives of the Netherlands 2007). As a consequence, the importance of the Triple Helix to the RNLN, and the approach to naval capability research, development, design, procurement, and the requirements for this to be successful are less clearly understood outside the RNLN. This was not as much a problem before 2005 because individual Service commanders were much more in control of large parts of the investment budgets. Subsequently they were able to decide for themselves were and how to invest that budget. This all changed and severely reduced the influence of individual Service commanders when the Chief of Defence became the corporate planner. This requires significant more effort to get Triple Helix-message across in a joint environment under severe budget pressure.44

The Defence Industry Strategy is important and possibly will increase in importance. But within the Netherlands there remains a stricter separation between State and industry, contrary to for instance France, Germany, the UK, and other countries within Europe. In most European countries the defence industry is seen as a strategic asset, not so much in the Netherlands.45 ‘That does not level the playing field. As a

43 Based on interview with R5
44 Based on interview with R10
45 Based on interview R4
government we should not try to be more Catholic than the Pope. We need to defend our own interests, and not give them away to easily to our partners’ said a former naval officer employed within the maritime industry.\textsuperscript{46} According to a HCSS scholar additional grounds for this will arise in the near future. ‘Because of the fast technological developments adaptability on the capability level is incredibly important’.\textsuperscript{47} Subsequently with your own domestic naval shipbuilding cluster you will be able to continuously follow up on operational experiences and requirements. Much better so than when depending on the international naval shipbuilding industry. Another reason is the possible trend of the multipolar world which increases the need for the national ability to maintain capabilities. This is something different than renationalizing industry, international cooperation is a given.

4. International Cooperation

In a globalized society the supply chain always consists of international partners, even when the main contractors are domestic. From a political point of view international defence cooperation is a must, but should not be a goal in itself. ‘International cooperation often sounds better than it is. Until now it has often cost more money than it generated, we have to be honest about it’.\textsuperscript{48} Although international cooperation is leading within the MoD it is also argued that it is not well embedded. The Directorate of International Military Cooperation, for instance, does not have a leading role within the MoD.

To increase the chance of success four levels of liaisons should be in place: First, government-to-government relations. Are the political agendas alike and as important,
how are the personal relations between the respective ministers? The excellent relation between the present female ministers of Defence from Norway, Germany, Sweden, and the Netherlands is a positive example of this. Second, military-to-military relations focus on similarity in operational concepts, strategic culture, and existing cooperation. Examples of this are the cooperation between the UK/NL amphibious force and the 1 GE/NL Corps. The next level of liaison is the cooperation between industries. An example is the cooperation between the aircraft maintenance community in the Netherlands and Lockheed Martin, and Thales Netherlands and Raytheon with regard to radar and missile technology. The final level of liaison is the cooperation between national R&D institutes and the similarities between knowledge cultures. To increase the probability of success of international cooperation all four levels should be in place. 49

B. MARITIME TRENDS AND IMPACT

The seven maritime trends identified in chapter II are all more or less identified in the strategies analysed and interviews held. This supports the assumption that these maritime trends are acknowledged throughout at least the Western world. In addition, two other trends with maritime implications, cyber security and operations, and civil-military cooperation, were distilled. Both trends were also confirmed in the interviews. After addressing the possible change from a multilateral world to a multipolar world, flow security, and the proliferation of high-tech technology and weapon systems, these two other trends and their impact will be discussed.

1. From a multilateral to a multipolar world

A general trend, which is recognized across the board, is the possible transition phase from the present multilateral global system to a multipolar system, with two or

49 Based on interview with R5
more opposing power blocks consisting of one or more sovereign states. In which traditional supranational organizations, on security related as well as in financial-economic policy areas, have less influence due to a reduced acceptance and/or competition by new regional organizations.50

The rise and growing assertiveness of China, particularly in exerting its rising power in the South China Sea and showing its presence in Africa and beyond, is a case in point. The associated pivot from Europe to Asia by the U.S. supports this. More of direct influence to Europe and the Netherlands is the resurrection of Russia. In particular, this resurrection is shown by the aggressive actions towards the Ukraine with the annexation of the Crimea and its direct involvement in the civil war in the East of the Ukraine. But also in its aggressive rhetoric towards other neighbouring states, the significant increased operational activities of its armed forces, and the military support of the Assad-regime in Syria.

Geopolitics has returned and with it the potential for interstate conflict. Extending from this, deterrence and crisis management have returned to the political agenda. ‘The game between the Great Powers has certainly returned, and one cannot exclude oneself from that game’.51 This does not mean that large interstate conflict is imminent, although the threat of conflict is felt much more severe in countries near Russia. To avoid such conflicts classic deterrence has regained its place on the central stage.

With the erosion of the shaping power of Western states towards the (Far) East and the change to a more multipolar world there is also a trend against globalisation. States want to reduce interdependencies, although these have a dampening effect on conflict development, and become more self-reliant. This is also supported by

50 Based on interviews with R6, R10, R11, R12
51 Quote R10
technological developments, like 3/4D-printing and local energy supply, as predicted by the Singularity University. The question is will this counter trend slow or reverse the globalisation trend?

2. **Flow security and its impact**

The original seven maritime trends can be divided in two groups, consisting of the first five more general trends, and the last two trends, which are more technology driven. The first group of trends supports the idea of the fragility of the flow of goods across the globe. Activities of state and non-state actors along the shipping routes and maritime choke points can easily disturb that flow which can have important effects on the economies around the world. This is especially true for the Dutch economy with its high reliance on the international trade. The Dutch MoD also recognizes this. At present, in response to two motions from Parliament (Van der Staaij 2014) (Van der Staaij 2015), the MoD is working on a multiannual outlook, called Doorontwikkeling Krijgsmacht (DOKM) or translated Further or Continued Development Armed Forces.

Within DOKM three types of security or policy goals are identified. First, *Internal security* or territorial security and homeland security, focuses on the protection of NATO and EU territory and Dutch society. Second, *External security* focuses on the stability of, and countering the threats originating from, the ring of countries near Europe and the Netherlands Kingdom. Finally, *Flow security* that focuses on the protection and uninterrupted transportation of all types of traffic, goods, energy, financials and data.52

With the port of Rotterdam, Amsterdam international airport, the Amsterdam Internet Exchange, and other critical infrastructures, the Netherlands is one of the major hubs in the globalized world. The Netherlands can be seen as, and sees itself as, a

52 Based on interview with R3, R4, R7, R9
systemically important country. Systemically important countries are as important to the global trade and economy as systemic banks are to the international financial economy, and whose failure might trigger a financial crisis. The Netherlands is one of the most globalized countries in the world and that will only increase’ and ‘the Netherlands still has global ambitions’ as a senior diplomat stated. This privileged position also brings with it the global responsibility to secure the continuation of these global systems. Subsequently, interference in one of these systems becomes a Dutch interest. Similar to a small country like Singapore, this allows the Netherlands to punch far above its weight. In such a globalized world, and in order to achieve and secure once foreign goals and interests, the military instrument is expected to become increasingly important.

The protection of the uninterrupted transportation of goods across the maritime domain, or the sea-lanes of communication, is traditionally an important task for the RNLN. This refers to the economic use of the sea as well as for its military use. In the present security environment, it is expected that NATO’s ‘Reinforcement Strategy’ will be reconfirmed during the Warsaw Summit. This results, in accordance with the senior NATO/EU representative, an army officer, in the fact that ‘the lines of communication will again gain significant importance’. In addition, it will be enhanced with limited ‘Forward Presence’ acting as a tripwire function by the 28 member states on the territory of the Eastern member states.

For this reason, Flow security is of particular interest to the RNLN. To be able to secure the flow of goods among others, two issues are of particular importance: (1) maritime situational awareness and (2) the size of, and the large distances between, the

53 Systemically important countries are as important to the global trade and economy as systemic banks are to the international financial economy, and whose failure might trigger a financial crisis.
54 Quotes R12
55 Based on interview with R7 and R12
56 Based on interview R12
57 Quote R13
58 Based on interview with R13
areas of interest along and between the different sea lanes of communication across the world.

To be able to assess a situation one first needs to have awareness of what is happening. In the maritime domain, which amounts to more than only the sea itself, this is called maritime situational awareness. For naval and coastguard forces this is focussed on understanding what is happening along the sea-lanes of communication. The maritime dimensions are extremely large to cover. Already space-based AIS\textsuperscript{59} systems are used to detect and track shipping across the world. However, the activities of smaller and non-AIS operating vessels are a significant challenge in acquiring maritime situational awareness. The increased use of (un) manned surveillance capabilities and the ability to share this information with civilian agencies and military partners is necessary to reduce this present capability gap.

The enormous distances within the maritime domain and the always-limited number of assets to cover these areas provide an eternal challenge to provide security at sea. Such an example is the geographical change in the area of operations from the preliminary successful operations along the Horn of East Africa to combat piracy, to the present anti-human trafficking operations in the Mediterranean, to the awareness of the growing maritime (in) security in the Gulf of Guinee in West-Africa. Although drones will be of increasing importance to cover these enormous areas, the reach of most affordable drones will remain relatively limited. Therefore, manned mother ships will be essential to transport, launch, operate, share information with, recover, and maintain different types of drones and sensors. In addition, similar to the police officer on the

\textsuperscript{59} Automatic Identification System: Regulation 19 of SOLAS Chapter V - Carriage requirements for shipborne navigational systems and equipment - sets out navigational equipment to be carried on board ships, according to ship type. In 2000, IMO adopted a new requirement (as part of a revised new chapter V) for all ships to carry automatic identification systems (AISs) capable of providing information about the ship to other ships and to coastal authorities automatically (IMO 2016).
street, actual naval and coastguard personnel will continue be necessary to investigate, board, and search ships, take suspected criminals into custody, collect evidence, and provide assistance to those in need. The future capabilities of the navy will need to have the ability for a continuous forward presence, operate independently, and to sustain operations on the high seas and in the littoral for prolonged times.

3. Impact of the proliferation of technology and weapon systems

The challenges of first five maritime trends are becoming increasingly more difficult to deal with because of the last two challenges. The traditional technological naval advantage of Western states over other state-actors and non-state actors are challenged with the proliferation of information technology, high-tech sensors and systems, advanced weapon systems, and the development of anti-access weapons. Especially China, Russia, and Iran possess and are developing, and selling hypersonic and ballistic missile systems capable of targeting (major) naval assets. Also non-state actors, like Hezbollah, have used anti-ship missiles to attack naval ships and sinking an innocent merchant ship in the process.60

‘The principles of naval warfare do not change. With sea control and sea denial one tries to achieve political goals. The instruments which are deployed for this are anti-access and anti-denial’.61

In order to continue to provide security at sea and from the sea naval forces have several options. Surface naval ships will need to have an inherent capability to defend against such anti-access and area-denial (A2AD)-threats if one wants to operate freely in those challenged areas. The ability of escalation dominance of the armed forces in general has returned within MoD thinking. Other options are to be capable, if necessary,

60 On 14 July 2006 Hezbollah attacked INS Hanit with two Iranian C802 anti-ship missiles, damaging the Israeli naval ship and unintentionally sinking an Egyptian freighter (Defence Update 2006).

61 Quote by R5, R&D professional
to disable such threats with stand-off weapon systems\textsuperscript{62}, electronic warfare capabilities, or to investigate the use of offensive cyber operations.\textsuperscript{63} Finally, depending on the specific anti-access threat some naval capabilities, such as submarines, are far less susceptible to anti-access systems than others (Rehman 2015). This is one of the premier reasons Australia is so heavily investing in acquiring new long range submarines (Hasik 2016).

4. Cyber security and operations

The origins of the maritime trends from chapter II are from 2002, the phenomenon of cyber security and (offensive) cyber operations, at that time, were hardly known. One should remember that the first Apple iPhone was released only in 2007. In terms of the cyber domain, this is already ancient history. A lot has changed since then.

The Netherlands has one highest internet-user densities in the world and a very competitive Internet market. With the Amsterdam Internet Exchange, the Netherlands is an important digital gateway within the worldwide Internet. A positive effect is the high level of interconnectedness of civilian life and information and communication technologies. Downsides are the threats and challenges to the safe and secure use of these services and the protection of personal data. The biggest threats are cyber activities by states and criminals (Dutch Ministry of Security and Justice 2013, 7).

Within the Netherlands two strategies are of importance in the context of cyber security. First, the National Cyber Security Strategy (NCSS) released in 2013. This overarching strategy envisions a dynamic balance between security, liberty, and societal growth. This balance needs to be achieved and maintained in a pragmatic dialogue

\textsuperscript{62} This need not be naval capabilities per se. Air launched weapon systems are not excluded.

\textsuperscript{63} On 6 September 2007 in Operation ORCHARD the Israeli Defence Force supposedly used a cyber operation to temporarily disable the Syrian air defence capabilities to attack a nuclear facility inside Syria (Silverstein 2010).
between national and international stakeholders. The Netherlands wants to play a leading role in order to achieve internationally accepted norms and standards within the digital domain (Dutch Ministry of Security and Justice 2013, 7-8).

Second, the Defence Cyber Strategy (DCS) updated in 2015. This strategy has a narrower focus than the NCSS and is specifically developed by the Dutch MoD. The DCS has seven spearheads\(^\text{64}\) in order achieve the next steps to ensure improved and more intensive security of the digital domain (Dutch Ministry of Defence 2015). Important to remember is the fact that offensive cyber operations are included within the DCS, contrary to many other EU/NATO member states. The RNLN, similar to the other armed services, operates more and more in networked environments or eco-systems. Because of the on-board networks and communication systems, naval ships are also vulnerable to cyber intrusions, malicious software, and attacks. The ship’s present internal battle, fighting floods and fires, needs to be complemented by the battle against cyber threats and attacks (Raytheon 2016).

Thinking on all levels about cyber and information warfare is still somewhat in its infancy. Everybody understands the critical importance of information dominance and the requirements for present and future investments. However, the practical execution of operations, within this new fast developing domain, analysing, validating, sharing large amounts of data within and between networks of state and non-state agencies, and maximizing support to the overall aims of the government, are not yet clear. A member from the MoD’s Directorate of Plans who said: ‘You can talk about it for days, but nobody exactly knows how we are going to achieve this’\(^\text{65}\) best illustrates this. This also

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\(^\text{64}\) The seven spearheads of the Defence Cyber Strategy are: Attract, incorporate, and develop cyber professionals; Effective innovation and acquisition; Joining forces and working together; Knowledge and cyber awareness; Strengthening digital resilience; Strengthening digital intelligence; Strengthening cyber assets during missions (Dutch Ministry of Defence 2015).

\(^\text{65}\) Quote by R4
requires an organizational agility, which at present is absent. As another Directorate of Plans’ representative said: ‘it is also something that will not be ready tomorrow, it needs to develop. But we are lagging behind for instance Islamic State. We have to be honest about it. They [IS] are making better use of the present technologies and possibilities to communicate [their message] than the armed forces do’. 66 One of the first steps is probably a more centralized, joint positioning of the Defence Cyber Command, directly subordinate to the Chief of Defence. The reason for this is that cyber security and operations will need to indiscriminately support all warfare domains. But also that, at the strategic level, cyber operations need to support the other instruments of national power to address the rise of hybrid threats, conflicts, and warfare. 67

5. Civil-Military Cooperation

The second new trend is the continuation of the deepening of the cooperation between civilian and military organizations. With the increasing nexus between internal security and external security, as identified in almost all strategies, this trend is irreversible. Presently the WRR is working on a report with regard to this nexus and to address more effectively within the security strategies. 68 It is increasingly recognized with the government that a whole of government approach is required. The Dutch government’s interdepartmental working group ‘drones’ is put forward as an example of

66 Quote by R9

67 Hybrid threat is a phenomenon resulting from convergence and interconnection of different elements, which together form a more complex and multidimensional threat. Hybrid conflict and hybrid war are two specific categories whereby some hybrid tactics are used by a state to achieve its strategic ends. Hybrid conflict is a situation in which parties refrain from the overt use of armed forces against each other, relying instead on a combination of military intimidation (falling short of an attack), exploitation of economic and political vulnerabilities, and diplomatic or technological means to pursue their objectives. Hybrid war is a situation in which a country resorts to overt use of armed forces against another country or a non-state actor, in addition to a mix of other means (i.e. economic, political, and diplomatic). (European Parliamentary Research Service 2015)

68 Based on interview with R11
such an approach. With the increase of the use of the sea as a resource, for food, energy, and raw materials, resulting in an increasing number of different actors at sea, this also occurs in the maritime domain.

The civilian organizations are first and foremost governmental organizations and other ministries, like the ministries of Foreign Affairs, the Interior, Security and Justice, and Economic Affairs. The cooperation of the Dutch general and military intelligence agencies is also an example of this trend. In addition, for the RNLN in particular, these also include the Dutch coastguards in the Netherlands and the Dutch Caribbean. Within the Dutch context both coastguards are network organizations, in which multiple ministries and their subordinate agencies collaborate. Finally, these also include non-governmental organizations at a more ad-hoc basis in the area of operations. Both, governmental and non-governmental, organizations are certainly not limited to national organizations only. A clear example of this are the maritime operations conducted by EU member-states and other non-state actors in 2015 in order to rescue and control the flow of migrants across the Mediterranean towards Europe, at that time mainly from Libya (Osterbro 2015). This has been visualized in Figure 10.

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69 Based on interview with R11 and R12
70 Based on interview R2
With a swift in the flow of migrants towards the Aegean Sea between Turkey and Greece, NATO has also joined this type of operation (NATO 2016). Another example were the integrated security operations conducted by the Dutch armed forces, national police, Dutch Coastguard, and other security actors, during the Nuclear Security Summit in March 2014 in The Hague (Dutch Ministry of Foreign Affairs 2014).
After the experiences of the wars and subsequent state building missions in among others Iraq and Afghanistan, the goal of the MoD is now, where possible, to focus more and more on prevention and the front end of the conflict curve.\textsuperscript{71}

Figure 11. Conflict curve

The goal is to pro-actively prevent the outbreak of hostilities, but also to limit the impact of the outbreak of diseases or pandemics, migration, terrorism, and non-proliferation. ‘\textit{Stability will become a driving factor’}.\textsuperscript{72} For the armed forces the diplomatic role, well founded upon the military role, increases in importance. The HCSS

\textsuperscript{71} Based on interview with R9

\textsuperscript{72} Quote R8
scholar argued that ‘It is no longer a side show but belongs to the core competences, not only to counter insecurity but also to promote security’.73 Or as the senior diplomat said: ‘Defence and Foreign Affairs, they are integrated worlds. The agenda of the Steering Group Military Operations only becomes larger. There is so much to discuss’.74 This requires expeditionary armed forces and the cooperation with a conglomerate of governmental and non-governmental security actors, or more popular said, to operate in an ecosystem of security partners. In this ecosystem the ‘[Ministry of] Defence is the custodian of security’75, because it is a strong and powerful player.76 Naval deployments by the RNLN in support of the African Partnership Station program77 are prime example of this role. In a supporting role the RNLN provides the highly mobile logistical base from which multiple security actors can operate to support the local security-apparatus and other local institutions.

Coastguards used to operate only in home waters, but now more than ever their ships operate on the high seas and are there to stay. In the Western hemisphere the construction programs of coastguard vessels exceed by approximately 4 to 5 times the number of naval construction programs. This means that investments in the maritime security are made, but just in other areas than traditional navies.78 But it is not limited to coastguards only. Within the EU, with its comprehensive, cross-sectorial approach to maritime security, the Directorate-General Taxation and Customs Union (DG-TAXUD)

73 Quote R10
74 Quote R12
75 Quote R10
76 Based on interview with R10
77 African Partnership Station (APS) is the U.S. Naval Forces Africa’s flagship maritime security cooperation program. The focus of APS is to build maritime safety and security by increasing maritime awareness, response capabilities and infrastructure. For more details, see: http://www.africom.mil/what-we-do/security-cooperation/africa-partnership-station. Unfortunately, this year’s RNLN APS-deployment (2016) is cancelled due to lack of funds.
78 Based on interviews with R6 and R7
has developed itself as the ‘custodian of the global supply chain’. DG-TAXUD conducts the security risk assessments up to the individual container and has developed a strong maritime security focus along the way.\textsuperscript{79}

The present steps taken, such as the establishment of a joined maritime operations centre, in order improve the cooperation between the RNLN and the Dutch Coastguard and associated safety and security organizations, for operations in the North Sea and beyond are to be continued and accelerated. This will improve the maritime situational awareness on the Dutch continental shelve and increase the effectiveness and efficiency of all involved. Similar, but within the local context, this also applies to the Dutch Caribbean Coastguard and naval operations in the Dutch Exclusive Economic Zone.

In the organizational networked security environment, a narrow (naval) domain focus is out of the question. The challenge nowadays is how do all those different organizations and institutes position, support, and enhance each other, in executing their specific tasking and responsibilities. One cannot operate without the other. More and more navies need to show significant flexibility in the ability to embark other actors. On the strategic level this requires sufficient attention to address and further develop this cooperation. With the present limited emphasis on the maritime domain from the internal security perspective, a proactive stance from the MoD and the RNLN to involve and motivate such actors will be essential.\textsuperscript{80} Subsequently, these actors and their requirements will have an impact on the required flexibility of future designs, in particular their outfitting. Involving these partners in the drafting of requirements for future naval projects seems to be beneficial considering the trend of increasing civil-military cooperation.\textsuperscript{81}

\textsuperscript{79} Based on interview with R7
\textsuperscript{80} Based on interview with R11
\textsuperscript{81} Based on interview with R8
Public-private partnerships are something, which are a strong point within the Netherlands. This is already brought forward when discussing the political context, referring to the Triple Helix and the cooperation between industry, knowledge centres, and the MoD. But also it refers to other possibilities in cooperation. Presently in the Netherlands new military barracks, such as the Kromhout military barracks in Utrecht, and the new RNLMC Michiel Adriaansz de Ruyter barracks in Flushing, are and will be build, owned and operated by civilian consortiums. In the maritime domain similar arrangements are already introduced. The Royal Fleet Auxiliary is a civilian-manned, UK MoD owned fleet to support the Royal Navy. The Royal Navy’s River-class offshore patrol vessels are leased from Vosper Thornycraft Shipbuilding for a period over ten years (naval-technology). Canada is in the progress of temporarily leasing a converted commercial ship to refuel its naval ships (Pugliese 2015). Below the threshold of full-scale military operations such arrangements look promising. Military-owned and military-operated, can be mingled with other possibilities of civilian-owned, civilian-operated, and civilian-owned and military-operated. Especially considering the increasing need for platforms and military systems on those platforms to become more modular-based due to the ever-increasing technological developments. For the RNLN the different partnerships should certainly be considered when looking at the MCM, hydrographical, and other logistical support replacement programs.

C. NAVAL TRENDS AND IMPACT

1. Passive survivability

Size matters, bigger platforms have inherent stronger passive survivability. This is in specific areas contrary to the increase in the application of civilian standards, which

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82 Based on interview with R11
83 Based on interview with R13
has become popular to reduce costs and standardize designs. Passive survivability of the Dutch Air Defence and Command Frigates (ADCF) against high-intensity warfare threats is significant, but so are the costs of this capability. However, this increase in cost can be compensated by the idea that the ship’s combat system in reality probably needs to be less saturation capable. Does an ADCF really need to be capable to simultaneously engage over 16 anti-ship missiles?

With the present and forthcoming Mach 5+ and hypersonic anti-ship weapons the risk of secondary damage to ships, caused by debris of these weapons after they have been shot-down, is significant. Even ships which do have the most advanced anti-ship missile defence capabilities against those new hypersonic threats probably require a significant passive survivability to deal with possible secondary damage caused by debris of these new threats.

Passive survivability not only refers to high-intensity warfare but also to the capability to withstand small calibre weapons and rocket propelled grenades, which is much more likely during constabulary operations and Iran’s Revolutionary Guard-style swarm attacks. New materials and laminates seem to continue to provide opportunities to improve the balance between weight, protection, durability, workability, and cost.

An added bonus of size is that it is better supports large multi-mission bays and the concept of having sufficient room for the required increase in the independent sustainability of ships and the future implementation of new capabilities and techniques to prevent future technical and operational obsolescence.

2. **Change in application of sea power**

With the expeditionary focus of the U.S. Navy and the development and proliferation of A2AD-weapons, the U.S. Navy surface warfare leadership published in the beginning of 2015 the conceptual idea of ‘Distributed Lethality’. The core element of this new idea is a shift to the offensive within the navy’s military function. It argues that the shift to the offensive is required to attain sea control in wartime in order to be able
project power ashore. Second, it is a response to the development of A2AD weapons and sensors. Third, it reinforces the Navy’s integration with the Marine Corps. Finally, it is supposed to be the most effective and efficient use of investments made in surface-force lethality in the last two decades (Rowden, Gumatatotao and Fanta 2015).

*Distributed Lethality* intends to spread the playing field in order to complicate the targeting process of the opponent, and with applying network centric warfare create critical mass when and where required. One needs to consider that with ever increasing ranges of weapon systems the actual disposition between mutual supporting units can be quite extensive. In line with what Rear-Admiral Peter Fanta, one of the godfathers of the concept, has said: ‘*If it floats, it fights, that’s ‘Distributed Lethality’ (..) make every Cruiser, Destroyer, amphib, LCS, a thorn in somebody’s else’s side.*’ (Gaby 2015). The US Navy is presently seriously considering the place a long-range strike missile capability on board their amphibious ships (Kanavakis 2016). On a much smaller scale the reasoning behind *Distributed Lethality* also applies to the RNLN and is also consistent with the renewed emphasis of the Dutch MoD on the requirement of escalation dominance and deterrence.

‘Deterrence only has effect when it is credible, in capability as in actions’.84 ‘The biggest challenge is to provide sufficient firepower’.85 Deterrence also means that one needs to have everything available, this includes capital munitions such as missiles, torpedoes, and other types of munitions. This costs a lot of money and the present awareness of this will become a driver for international cooperation. But directly linked to the credibility of deterrence are the A2AD-capabilities of non-aligned states. Counter-A2AD becomes essential for an effective deterrent. Next to anti-submarine warfare capabilities, this requires the ability to shoot down ballistic missiles of the opponent, and

84 Quote R13
85 Quote R3
to destroy its infrastructure of radars, missile launch sites, and command & control. Long-range land-attack cruise missiles, Ballistic Missile Defence (BMD)-intercept missiles are prerequisite for such a capability. With the present ADCF the RNLN has all the knowledge and the provisions for such capabilities. With the main European obstacle to power projection probably being political, these can be supplemented by less A2AD vulnerable capabilities such as submarines, special operating forces, strike drones, offensive cyber operations, and electronic warfare capabilities (Simon 2016).

In addition, the maritime and naval trends point towards the growing importance of the diplomatic and constabulary role of naval forces without disregarding that fundamental military role. Such roles require preferably larger ships with the ability to support and execute among other things, humanitarian assistance, emergency disaster-relief, maritime surveillance, drugs interdiction, non-combatant assisted and protected evacuation operations, and naval presence.

3. Moore’s law, unmanned vehicles and sensors

The technology is developing at an increasingly rate. The U.S. ‘Third Offset Strategy’ has the goal to seek and regain the competitive edge of the U.S. and its military allies mainly via artificial intelligence and unmanned vehicles. It is going to be one of the driving forces towards the future defence capabilities. These are closely attached to the present NATO and EU identified military shortfalls.

The civilian application of technology is presently the primary driver of this development. The dual-use of such technologies provides the first opportunity. This is also important because from EU-perspective R&D budgets can only be allocated when

86 Based on interviews with R3, R5, R9, R10, R13
87 Based on interview with R13
88 Based on interview with R1
technologies not only have a military application. An important initiative in this field is
the ‘Preparatory Action on the CSDP related research’. The programs from this
initiative will start with the EU budget cycle around 2021. ‘We [the MoD] need get
projects in that program, that allows you to combine the first trend [EU/NATO
cooperation] and the fourth trend [AI and unmanned systems], and the money does not
come from your own [national] budget’ argued a senior Dutch EU/NATO
representative.

The second opportunity is the crossover use of civilian technology, but now
combined with military know-how. This will need to provide, in addition to other and
new capabilities, an increasingly maritime surveillance capability as the number
of platforms continues to reduce. The command and control systems on board will need to
be able to process and disseminate the growing amount of gathered data from an
increasing number of sensors. The secure exchange of all this data requires more and
more satellite bandwidth and inherent cyber security features.

Another consequence of this ever-faster technology development is requirement
to detach the development of platforms and the development of the on-board sensors,
weapons systems, command, control, and communication systems. Platform development
is a typical example of long term innovation, contrary to the short-term innovation as
presently seen in the IT-sector. The separation of these two paths of development within
navies will need to prevent operational and technical obsolescence during the entire life
cycle of naval platforms, regularly exceeding 40 years of service.

89 ‘Preparatory Action on the CSDP related research’ is a Group of Personalities, one each from every
member state, who have been asked to provide advice on this subject and implement a European Defence
Research Program. Paul de Krom, CEO of TNO, represents the Netherlands in this group.
90 Quote R13
91 Based on interview with R5
92 Based on interview with R1, R4, R5,
With the introduction of unmanned vehicles and sensors the role of ships will change. First, it is to be expected that ships will become mother ships of a combination of manned and unmanned vehicles and sensors. Future ship designs will need to incorporate the requirement for more and more space in order to be able to store, transport, launch, recover, and maintain a growing number and different types of unmanned vehicles and sensors. These types of UXV’s should be an inherent capability or organic type of assets. This does not mean that the analyses of all data acquired needs to be done on board, on the contrary. Those (back-office) capabilities are scarce and expensive in personnel, training and experience. Centralisation would make sense in at least two fields of expertise: maintenance support and surveillance and intelligence support. First, the dependence of the RNLN on industry with regard to maintenance support is already increasing. Improved connectivity and remote diagnostics provides new possibilities for manning concepts. However, this requires a joint approach in new types of contracts between the MoD and the industry.93 Second, for surveillance and intelligence this provides the opportunity to share and compare the gathered data from one’s assets with the data and validated information from a wide range of sources, which would be impossible to execute on board.94 ‘We [the MoD] always want to maintain an information lead over our adversaries. This requires that all sensors from all users are combined’.95

4. Research and Development

To maintain a technological lead on one’s adversaries or competitors, innovation is key. This does not come free of charge. At present the MoD spends only approximately

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93 Based on interview with R8
94 Based on interview with R9
95 Quote R9
1% of its budget on R&D and only in the traditional domains, although it does so quite effectively in comparison with other NATO states. In other words, relatively speaking ‘a lot of bang for the buck’. At a minimum this should be increased to 2%, which is the European Defence Agency recommended norm. This is also acknowledged within the MoD. However, when the MoD takes innovation serious and really strives to achieve the technological lead than R&D budget well in excess of 2% is warranted. Serious considerations should be given to allocate a part of this budget under the direct control of the individual services. This provides the individual services to invest in short and long term innovations as they see fit and meet their service specific short term and long-term requirements.

D. FUTURE FLEET CAPABILITIES ANALYSIS

The framework for conceptual analysis, see Figure 7., provides the foundation to deduce the future fleet capabilities for the RNLN to maximize support of the national policy objectives. Except for capabilities, all individual elements of the framework have been addressed and analysed. The strategy analysis in chapter IV showed the future maritime forces and naval capabilities need to be able to execute all three naval roles within the Span of Maritime Operations. These maritime forces need to be capable, flexible, deployable, interoperable and sustainable. In this chapter the political context and the impact of both the maritime and naval trends are discussed. To enhance and support an integral analysis of all the individual elements in the framework the majority of the interviewees has been able to present their views on the future fleet capabilities based on vignettes as presented in Appendix D. Vignettes.

96 Based on interview and quote R1
97 Based on interview with R9
98 Based on interviews with R1, R4 and R5
1. Vignettes

The goal of the use of vignettes, with different types of navies, was to provoke opinions, identify fears, challenge traditional Dutch naval thinking, identify common and distinguishing ideas between interviewees, enrich the research, and use operational solutions in support of strategic thinking. The goal was not to select the required future RNLN fleet composition. The three selected fleet compositions, and their estimated costs, were only to support these goals and drawing other conclusions from these compositions would ignore the limited scope intended. Importantly, during the interviews a number of common and distinguishing themes, ideas and opinions surfaced.

(1) Long-term fleet plan

Especially the naval officers express the necessity for a long-term fleet construction program, instead of approaching every naval procurement project in splendid isolation. The goal is to maintain a naval fleet capable of executing the wide-range, and number, of missions often requested in support of the national policy objectives. Such long-term development programs frequently need to compete for budgets with acquisition programs with totally different timelines, for instance ammunition. Sometimes it is related to the call for a ‘Delta plan’ for the armed forces. The interviewee from the Directorate of General Policy linked it to a continuous construction program versus batch construction, which provides a stronger basis and less risk for the naval industry.99

99 Based on interviews with R1, R2, R4, R5, and R7
(2) Escalation dominance

With the present changing geopolitical environment, the awareness has resurfaced for the need of escalation dominance and adaptability in order to deal with all three naval roles during the entire life span of a naval platform. A negative example of this, which was frequently mentioned, is the RNLN’s Ocean-going Patrol Vessel (OPV). To compensate the RNLN, for the sale of four M-frigates, four OPV’s were built for constabulary operations. Unfortunately, these ships lack the escalation dominance of their predecessors and as a consequence the adaptability to re-role within deployments. With hindsight previous naval supporters of the concept now look at it as: ‘once, but never again!’ However, this should be seen from the perspective that in this case frigates were downsized. What if the OPV was an upgraded version of a smaller type of naval vessel within the RNLN, such as mine-hunters or other general purpose and support vessels? Because the coastguard and constabulary missions executed by the OPV will remain important as emphasized by almost all interviewees.\(^{100}\)

(3) Challenges

One recognized challenge within the present RNLN is the number of different types of platforms. In previous decades the RNLN had up to eight or more units of the same type, nowadays one to four is the norm. This presents the RNLN with an enormous challenge in maintenance and life cycle cost. This awareness has already resulted in the drive to replace a number of different smaller naval vessels with one common multi-purpose platform. This platform needs to be able to handle a different number of task-specific modular systems. In line with common COTS-platforms four additional advantages increase effectiveness. First, similar to the present coastguard vessel

\(^{100}\) Based on interviews with R1, R2, R3, R4, R5, and R6
Guardian, which has a contract above 40+ weeks a year, the number of sea days per platform could be significantly increased in comparison the present average of 150-180 sea days per year. Multiple crews can reduce the strain on a single crew. Experiences from the present hydrographical survey vessels, already working on such a basis, can be used to further develop this concept. Second, although the total cost of ownership of these platforms, including the naval operations specific modules, might not be lower than regular task-specific vessel, they are probably better suited to fulfil the wider range of constabulary missions. Third, with the increasing number of commitments, it would allow the RNLN to reduce the number of constabulary missions for the frigates and have them focus more on their primary military role. Finally, European cooperation is probably much easier with these types of vessels than the high-end naval warships.\textsuperscript{101}

(4) The submarine capability

Within the vignettes only the third option had a submarine capability. Over half of the interviewees, almost all non submariners and not only naval officers, stressed the strategic importance of a long range, expeditionary, multi-mission submarine capability within the RNLN.\textsuperscript{102} Submarines provide a significant strike capability at sea and from the sea, especially when equipped with tactical land strike missiles. It provides an asymmetric capability against a stronger opponent and the capability to operate in areas without sea control or to deny access to certain areas to the enemy. These are also the most important reasons for the proliferation of submarines in South East Asia. The replacement of the present Walrus-class submarines is presently under political consideration.\textsuperscript{103} But the significant investment required for such a capability is not

\textsuperscript{101} Based on interviews with R3, R4, and R8
\textsuperscript{102} Based on interviews with R1, R4, R5, R8, and R10
\textsuperscript{103} The A-letter regarding the requirement for the replacement of the submarine capability has been send to parliament for approval to start the research phase (B-phase). (Dutch Ministry of Defence 2016)
without opposition. The *Clingendael* scholar argued that: ‘*The requirement of the Walrus-class submarine replacement program should not only be considered within the limits of that project, but within the wide scope of all requirements [of the armed forces]*’.

(5) Integrated air and ballistic missile defence capability

A key future fleet element explicitly mentioned by almost half of the interviewees, not only naval officers, is the present ADCF with BMD-capability. Next to the US Navy, no other navy has such a capability based on non-US made equipment and sensors. Adding a BMD-shooter capability and a long-range land attack capability these ships probably become real game-changers in the present and future A2AD-environments. The impact of having such a capability will have a profound impact at the strategic level far exceeding the impact of normal similar sized frigates and the required additional investments.105

(6) The amphibious capability

The feedback on the vignettes also resulted in the awareness that the present amphibious capability does not have undisputed support within the RNLN. In addition, it does not hold top rank in the ease to conceptually explain the need for such ships in the future. On the one hand, the classical large-scale amphibious assaults are highly unlikely, and does such a large power projection capability really fit within Dutch political culture.106 Another reason, not specifically mentioned by the interviewees, is the vulnerability of such assets in the future A2AD-environments. On the other hand, the

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104 Quote R6
105 Based on interviews with R3, R4, R5, R7, R10
106 Based on interviews with R1, R2, and R8
amphibious power projection capability does provide the RNLN with a highly flexible capability, a capability that allows executing a broader range of tasks within the Span of Maritime Operations, and it is also important in maintaining the strategic link between the RNLN and the RNLMC.

In addition, as mentioned earlier large scale amphibious assaults are unlikely. However, smaller scale operations launched from the sea should certainly not be discarded. On the contrary, based on the increasing importance of special operations forces, if necessary supported by Special Operations Capable (SOC) forces, smaller scale power projection capabilities are becoming increasingly important\textsuperscript{107} (The Hague Centre for Strategic Studies 2015). Considering the advantages of such a capability, but also the expectations that in the future only smaller, company-sized, units will be deployed for SOF/SOC operations, all large surface units would preferably have such an inherent amphibious capability.

2. Alternative

Combining the observations with regard to the importance of the ADCF capabilities and the power projection capabilities provides opportunities for RNLN in the foreseen replacement programs around 2030. Considering the budget limitations, reducing number of hulls, and the mentioned strategic and operational imperatives, cross-over designs might provide a solution to these challenges. In this vision, the strengths of the present ADCF, its fighting power, BMD-capability, command & control, and passive survivability, are combined with the strengths of the present Rotterdam and Johan de Witt-class amphibious ships, but on a smaller scale per ship\textsuperscript{108}.

\textsuperscript{107} Based on interview with R13
\textsuperscript{108} Based on interviews with R1, R5 and R8
Instead of one RNLMC battalion to each of the two amphibious ships, assigning individual RNLMC SOC raiding squadrons to these new types of ships, the crossover concept gains significant flexibility and strength. With such a concept the individual units are highly flexible assets that can re-role quickly, together the ships become a highly capable Navy/Marine Expeditionary Unit on a realistic European scale.

This is quite a challenge and requires the ingenuity and innovation of the entire *Triple Helix*. However, the RNLN is already increasingly operating with modular add-on capabilities, such as boarding teams and medical teams, depending on the type of operation. Such wide-ranging requirements drive innovation and provide improved flexible solutions to the wide range of tasks bestowed upon a post-modern navy.\(^{109}\)

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\(^{109}\) Post-modern navy: Navies of this sort have an internationalist, collaborative and almost collective world outlook. They see their role as defending the system, directly at sea and indirectly from the sea. Their capacity to do so depends on four necessary naval capacities or roles: Maintaining Sea Control, Maintaining Good order at Sea, Maritime Power projection, and Maintaining the Maritime Consensus (Till, *Maritime Strategy in a Globalizing World* 2007).
VI. REFLECTIONS AND RECOMMENDATIONS

A. REFLECTIONS

Within the next two decades 80% of the RNLN’s fleet capabilities will reach their planned end of service life. The purpose of this thesis is to contribute to the decision-making with regard to the composition of the RNLN’s future fleet capabilities and requirements within the next two decades. It does so by answering the research question:

‘How can the Royal Netherlands Navy’s future fleet capabilities address the challenges of the global maritime and naval trends to maximize support to the national policy objectives, now and in the near future?’

First, a reflection on the theory is conducted. Followed by the impact of the maritime trends and the impact of the naval trends, concluded by an outlook of the possible future capabilities of the RNLN.

1. Theoretical Reflections

In chapter II the theoretical framework for this thesis is presented. Reflecting on these academic theories in the framework seems appropriate before presenting the main conclusions. This refers to the Rational Actor Model of Allison and Zelikow, Kingdon’s Multiple streams and window of opportunity, the Dutch Scientific Council for Government Policy’s (WRR) three types of national interests, and the Span of Maritime Operations.

The selected Rational Actor Model, based on rational choice theory, adopts the state as the primary unit of analysis. A state that is capable of making rational decisions based on preference ranking and value maximization. It is used as a particular lens to look at the framework of conceptual analysis, see Figure 7. But it is not the only lens available for analysis. In addition to RAM, Allison and Zelikow’s (1999) presented two
other decision analysis models: *Organizational Behaviour* and *Governmental Politics*. Different lenses provide different views. Almost like a zoom lens when zooming in, from the state level, to the organizational, and the individual level, the amount of detail with regard to how decisions are made increases. Certainly in the political arenas this can become a messy reality of personalities, which has little to do with rational behaviour. But this does not mean there is no role for rational thinking.

On the contrary, when analysing or predicting future outcomes, a combination of all three models will most likely draw a more comprehensive picture. Henry Mintzberg and Joseph Lampel support this line of thinking. They argue in their article ‘Reflecting on the Strategy Process’ (1999) that the ten different perspectives of strategic management represent different processes altogether and are different parts of the same process. A rightful position for RAM might even be supported by the worldwide trend of increasingly transparency and accountability of governments. More and more countries, pushed by among others public opinion, social media, and laws, are providing more and more transparency and accountability (Bertot, Jaeger and Grimes 2010). With increasing transparency, the rational of decisions made needs to become more and more clear to all actors involved. Considering all this when looking ahead in crafting a strategy or future required capabilities the rational model remains a likely starting point. It might even lead to a revitalization of the rational approach.

The second element of academic theory within the political context is Kingdon’s multiple streams and window of opportunity. Kingdon’s theory provides, especially within governments, an explanation for the common mismatch between the needs and requirements of the politicians, bureaucrats (including the military), and the People. An example within the context of this thesis is the present call for a long-term fleet construction plan by naval experts and bureaucrats. However, such long-term plans often do not match with the interests of politicians, who need to be re-elected every four years, and by the People, who have more short-term needs to be fulfilled by those same politicians. The rational actor model does not explain this phenomenon as it looks at the
state as a single monolithic actor. What seems logical from a rational perspective might not always be conceivable because of other factors as described by Kingdon. Awareness of this issue creates a need to provide to address the interests of the other stakeholders. Subsequently, in reality a broader approach than only a limited rational explanation is needed. Therefore, this thesis tells only a part of the story, although it is an important one.

A third element is the division of the three types of national interest\textsuperscript{110} as promoted by the WRR. This recommended division assist primarily to further distinguish between what really are vital national interests and which are more extended national interests shared with other countries. In most discussions people tend not to differentiate between the first two types. This blurs the debate and prevents a clearer identification of the vital national interest of the Netherlands, which needs to be protected regardless of the (in) actions of other nations. Other interviewees do not believe in niches because of the culture within the Netherlands and its universal ambitions, such as a nuclear weapons-free world, or refer to the significant influence of rhetoric in its application within the MoD and the policy note ‘\textit{In the Interests of the Netherlands}’. However, from a conceptual point of view the three-way division supports focus and international cooperation to effectively deploy a nation’s valuable and limited resources within the wide range of extended national interests in an increasingly complex and globalizing world.

Finally, at the centre of the framework for conceptual analysis, the Australian MoD’s \textit{Span of Maritime Operations} is applied. It is based on the original model developed by Ken Booth (1977). The model is particularly useful in explaining in a fundamental manner what navies have to offer to strategic policy makers. Instead of a more army-styled downward focus on the conduct of operations, it supports an upward focus by conceptually linking the wide range of naval missions and tasks in support of

\textsuperscript{110} Vital national interests, extended national interests, and niches, for more details see paragraph II.B
strategic policy objectives. Another advantage of this model is that it assists in explaining the focus and priorities of a navy with regard to the execution of its missions and the training it conducts (A. P. Jackson 2013).

A similar model is also presented in the Dutch naval doctrine ‘Fundamentals of Maritime Operations’ (2014, 316). Unfortunately, the Dutch naval doctrine does not name, elaborate, or refer to its conceptual relevance or origin. In my opinion this is one of reasons the awareness of this model and its benefits, based on my personal naval experience and the interviews held, is limited within the Dutch naval community. A more prominent role and deliberate application of the model would assist in structuring the already present way of thinking throughout the RNLN. As important, it strengthens the message of the strategic utility of the RNLN to politicians, strategic policy makers, and all other actors within the security ecosystem. This is not a small matter, certainly in times which requires significant political support for the needed investments to maintain credible capabilities for the RNLN in the near future.

2. Reflection on the maritime trends

The maritime trends identified and the interviews held do not for see a change in the ‘Span of Maritime Operations’ and the three functions of a navy. The RNLN will remain relevant when it maintains the capabilities to execute all three functions with the ‘Span of Maritime Operations’. In other words, the navy will continue to act as a soldier, policeman, fireman, and diplomat, within the wide range of instruments at the disposal of the government. The basis of a navy is grounded in its military role. The current swift or return to the more classic deterrence and crisis-response modus operandi, and the strong call for escalation dominance, can be seen within a continuous pursuit for a naval balance in order to execute all naval roles, functions, and tasks. It is not assessed as, or to become, a permanent or sole strategic focus. The migration challenges near Europe and the overall nexus of internal and external security, will demand a continuing of the constabulary role for the RNLN and a close, deepening, and special relationship with the Dutch
coastguards and associated (inter) governmental agencies. In addition to naval presence and the reassurance measures taken by NATO against Russia, the intended swift to the front end of conflict curve, acting like a ‘custodian of security’ in promoting security underscores the diplomatic function. Increasingly the RNLN will not be operating in isolation, but in a network of national, international, governmental, and non-governmental security actors. But regardless the role, naval forces need to be able to deal with present and future threats originating from anti-access and area-denial (A2AD)-capabilities and the cyber domain from an ever-increasing number of state and non-state actors.

3. Reflection on the naval trends

Norman Friedman’s seven naval trends (2008) provide interesting notions for the naval planners to consider for the RNLN’s future capabilities. First, the rapid technological sensor developments based on Moore’s Law reduce the effectiveness of stealth for surface assets rapidly over their lifespan. To invest in stealth for future surface capabilities seems therefore less efficient. Another effect of the increasing speed of technological developments is the requirement for naval platforms and naval systems, which have different innovation timelines, to increase the adaptability to incorporate future technological developments and prevent technical and operational obsolescence.

Unmanned vehicles are maturing rapidly for a wide range of tasks, especially the dull, dirty, and dangerous tasks. It provides opportunities to increase the number of platforms and sensors required for naval operations on the high seas as well as in the littoral. Manned platforms in the required numbers are simply unattainable due to manpower availability, and the trend of the rising cost of manpower. Nowadays unmanned vehicles range in size, capability, and endurance, from single sensor miniature craft that operate for minutes up to large long-range multi-sensor vehicles with an endurance of over 24 hours. Subsequently, all naval platforms will need to have the
capability to operate organic UXV’s and exchange data with both organic and non-organic UXV’s.

Maritime situational awareness is the nucleus of the information based operations, which allow limited assets to be deployed with increasing effectiveness. These picture-centric operations require the increased exchange of data and information between naval assets, military, and civilian headquarters ashore. The amount of data is growing exponentially. The combat management systems and the satellite communication systems need to be able to follow this trend as much as possible. However, gathering all relevant data and the capability to analyse, process, and disseminate this data will be very difficult to achieve on board all ships. A joint shore-based tactical and operational level intelligence fusion capability might provide the necessary expertise to share and compare the gathered data from one asset with the data and validated information from a much wider range of sources.

Passive survivability of surface warships is increasingly important, also with operations just below the threshold of war, in which rules of engagements and unclear situations, severely limit the proactive deployment of weapon systems. Size matters, bigger platforms have inherent stronger passive survivability. This is already supported by the trend of growing surface ship displacement within the RNLN. However, the use of civilian standards in this area would be contradictory to this trend. In addition, considering the wide range of operations conducted by naval ships, preferably all ships need to have ballistic protection against small calibre weapons and, if possible, rocket propelled grenades, used in asymmetric (counter)-attacks by state and non-state actors. This automatically provides improved protection against possible secondary damage from debris of high-end anti-ship missiles destroyed by the ships missile defence systems.
Both *External Security* and *Flow Security*, two of three security policy areas identified within new MoD thinking called ‘*Doorontwikkeling Krijgsmacht*’ (DOKM)\(^{111}\), support the realization that Dutch interests, security, and threats to our security originate beyond the NATO/EU borders. Only with expeditionary capable assets the armed forces are to provide the Dutch government with a military instrument to exert influence, and to address security issues, outside the traditional NATO/EU area of responsibility. For naval forces this requires the continued ability to conduct long-range offshore operations for prolonged periods.

In addition, the present development with regard to anti-access/area denial (A2AD) and the MoD requirements, of escalation dominance and credible deterrence, draws parallels with the goals originating from the US Navy concept of *Distributed Lethality*. This concept intends to spread the playing field in order to complicate the targeting process of the opponent, and with applying network centric warfare create critical mass when and where required. Credible deterrence requires the capability to counter A2AD-capabilities of other states. This can be achieved in two ways, which are mutual supporting: First, a defensive/reactive posture, which includes anti-submarine warfare, and air- and ballistic missile defence. Second, an offensive/pro-active posture to destroy the land based A2AD-infrastructure based on precision strike capability. Considering the present capabilities with regard to BMD, it makes sense to give priority to the defensive posture, followed by more offensive capabilities.

Finally, the maritime and naval trends point towards the growing importance of the diplomatic and constabulary role of naval forces without disregarding that

\(^{111}\) Within DOKM three types of security or policy areas are identified. First, *Internal security* or territorial security and homeland security, which focuses on the protection of NATO and EU territory and Dutch society. Second, *External security* focuses on the stability of, and countering the threats originating from, the ring of countries near Europe and the Netherlands Kingdom. Finally, *Flow security* which focuses on the protection and uninterrupted transportation of all types of traffic, goods, energy, financials and data
fundamental military role. Such roles require preferably larger ships with multi-mission bays to provide the ability to support and execute among other things, humanitarian assistance, emergency disaster-relief, maritime surveillance, drugs interdiction, non-combatant assisted and protected evacuation operations, and naval presence.

4. Future capabilities of the RNLN

From the perspective that the three naval roles will remain important a strategic choice between the roles is not recommended. This increases the strategic utility and flexibility of the RNLN. However, fielding naval assets able to effectively operate within all three roles is enormously costly and due to contrary requirements not efficient. A possible evolutionary solution to this problem is available. The idea of a so-called high-low mix\textsuperscript{112} of capabilities is already present within the RNLN. The present RNLN is more or less subdivided in three groups: (1) The fleet of large surface units, consisting of the frigates, OPV’s, LPD’s and the JSS; (2) the submarine squadron, consisting of four expeditionary, long range, multi-mission submarines; and finally (3) the fleet of small surface units, consisting of minehunters, hydrographical survey vessels, support vessels, naval and mine clearance diving teams, and other small craft.

The very core of the RNLN remains its war fighting capabilities, similar to the military role as the foundation of the Span of Maritime Operations. This military role remains the primary task of the submarine squadron and the fleet of large surface units. The replacement of the Walrus-class submarines is presently under political consideration. The intention to replace the present submarine capability by similar expeditionary, long range, and multi-mission submarines is supported. For the fleet of large surface units, a compositional change is considered.

\textsuperscript{112} Limited numbers expensive mission-critical assets are supplemented by a larger number of ships with a lower level of individual capability. (Speller 2014, 178)
First, the new future large surface platforms will as a baseline requirement possess the traditional naval war fighting capabilities, capable of operating within the future A2AD-environments, and include a ballistic missile defence (BMD) capability. The BMD capability at a minimum consists of the present detect, track, and report capability. To achieve its fuller and more strategic potential a shooter capability is highly desirable. In order to increase the capability to support and influence operations from the sea, adding a credible land-attack capability, and similarly to the submarine capability, will significantly increase the reach and naval influence capabilities in executing its diplomatic role in support of the Dutch government, NATO, or the EU. Together with the RNLAF’s F-35 Lightning II (also known as the Joint Strike Fighter), increase the overall strike capabilities and adaptability of the armed forces. The investments for these capabilities are not small, but considering the present international geopolitical context would be justifiable.

However, limiting the requirements to these core military capabilities would prevent the increased adaptability and flexibility required by the need to execute all three naval roles in the future. The present amphibious capability has been an excellent investment thus far and proved to be highly flexible within all three naval roles. Considering the advantages of such a capability, but also the expectations that in the future it is more likely that smaller, for instance company-sized, units will be deployed for SOF/SOC operations, all large surface units would preferably have such an inherent amphibious capability.

Combining the earlier mentioned BMD-platform with an amphibious ship design, a so-called crossover, provides an interesting angle to approach the challenge of the future replacement programs of present amphibious capability and all high-end warfare frigates. Especially considering the RNLMC is able to field six special operations capable raiding squadrons, which can operate independently, support SOF-operations, and operate together as battalions. Independent crossover frigates can have a significant flexibility to execute the tasks within the three naval roles and the adaptability to operate
in low-intensity and high-intensity environments. Subsequently, a number of crossovers operating together are able to create a potent flexible navy/marine expeditionary task group on a European level.

Besides the war fighting capabilities, the RNLN is the strategic partner of the Dutch Coastguard and the Dutch Caribbean Coastguard. With the nexus of internal and external security and the global maritime trends as discussed, the number of coastguard or constabulary operations will only increase. The creation of the European Border and Coast Guard supports this trend (Alexe 2016). For this reason, maximizing its supporting role towards the Dutch coastguards, instead of minimizing this support role, will also be beneficial for the RNLN. This is not to be confused with an argument for integration of the Dutch Coastguards within the RNLN. Organizational fears within the RNLN of becoming, or being looked at as, a ‘coastguard-navy’ is a pitfall for the opportunities provided in this growing market. The present fleet of small surface units seems in its future capacity, extremely capable to fulfill this role as one of their designated primary tasks. This does not exclude the contributions of the other more militarily capable naval units for these roles and tasks, but as secondary tasking.

The fleet of small surface units already has a close relationship with the Dutch Coastguard and other Dutch governmental security and safety organizations. This puts them in an advantages position to improve and strengthen this cooperation. The present platforms are already unsuitable to operate in the present-day hostile environments and have limited expeditionary capabilities. For these reasons the replacement of those platforms by one common, commercially-build general-purpose platform are under consideration. Only the specialized unmanned systems, to execute for example mine hunting and hydrographical survey tasks, will be more or less military of the shelf equipment. This specialized equipment, based on Moore’s Law, probably has a shorter innovation cycle than normally considered for entire platforms. When the requirements of the Dutch coastguards are taking into account early, these platforms can become high-end coastguard capabilities with little or no additional funding. These units will need to be
larger than the present ships, have inherently better sea keeping qualities, and a better range, which enables them to operate effectively in the most likely areas of operations: North Sea, Mediterranean, and the Caribbean.

Innovation maybe not as much be expected, or be pursued by, from an engineering perspective, but much more from new ways of public-private cooperation. Commercial shipbuilders have a lot of experience designing, constructing, and maintaining such offshore multi-purpose support ships, probably more than both the RNLN and Defence Materiel Organisation have. The new ways of public-private cooperation are, at minimum, to provide a significant increase in available sea days, increase in cost transparency, and separate platform innovation from the innovation within the modular military systems. In addition, it needs to reduce the strain on the present maintenance and logistical supply chains to better facilitate the support for the more complex high-end naval platforms.

5. Personal reflections

On a more personal note, the master Military Strategic Studies is of significant importance to increase strategic thinking and the role of the military instrument within the Netherlands. The contemporary focus is still heavily focussed on air power and land power and less on sea power. Considering the origin of this master, the present academic staffing of the faculty, and the recent start, this is understandable. However, the Netherlands is a globalized and maritime nation. As such the sea is of great importance to the nation, its economy, and its armed forces. This supports a balanced approach in order to better understand all elements of the military instrument, including sea power.

The limited academic attention to sea power research extends beyond the responsibility and influence of the Netherlands Defence Academy. The number of academic positions for naval and maritime strategy research sponsored by the RNLN is more limited in comparison with those of the air force and the army. Second, annually approximately ten, experienced mid-career, naval officers can participate in the MSS-
program. On the one hand, this is a significant investment in time, money, and resources for the RNLN. On the other hand, it provides the RNLN with a group of highly motivated students inherently interested in the maritime domain. An increase in awareness of this annual research potential could improve both the debate on naval strategy, concepts, other related naval subjects, and the direct return of investment of the RNLN.

B. RECOMMENDATIONS

In addition to the conclusions drawn in this thesis a number of recommendations can be made based on the literature research, interviews, and my experiences based on the research for, and writing of, this thesis.

1. RNLN and naval planners

First, it is recommended towards the future requirements planners to take the crossover concept into consideration for the replacement programs of the M-frigate, ADCF, and the amphibious ships. Second, take commercial offshore multi-purpose platforms as a starting point for the replacement programs of the minehunters, hydrographical survey vessels, and other logistic support vessels. This also provides an excellent opportunity to explore new public-private partnerships together with the maritime industry.

Second, the constabulary role will remain very important in the future. The role of coastguards and coastguard duties are a growth market. The RNLN can seize this opportunity, as administrator of the Dutch Coastguard, and maximize the support to both the Dutch Coastguard and the Dutch Caribbean Coastguard. Any institutional fears of being reduced to a ‘coastguard navy’ are unfounded. The navy’s senior leadership is recommended to move beyond these fears within the RNLN.

Third, the RNLN, the Dutch Coastguard, and Dutch Caribbean Coastguard, are the premier Dutch governmental organizations with a maritime focus. A joint and proactive stance in support of drafting the new national security strategy is important.
This seems somewhat obvious. However, the representative of the ministry of Security and Justice, lead department in drafting the NSS, conceded to a limited maritime awareness or focus at present.

In March 2017 the General Elections in the Netherlands are scheduled. Similar to the expected release of the new national security strategy prior to this date, it is recommended to the RNLN to consider the development of a strategic naval concept in addition to the present naval doctrine. The goal is to influence the drafting of this, and subsequent, election programs of the political parties and the Coalition Agreement discussions after the elections. As Samuel P. Huntington (1954) argued: ‘when a service does not possess a well-defined strategic concept, the public and the political leaders will be confused as to the role of the service, uncertain as to the necessity of its existence, and apathetic or hostile to the claims made by the service upon the resources of society’. With a decade of large naval replacement programs approaching, without additional funding the RNLN is probably effected disproportionate in comparison with the other Services.

2. **Future research**

In addition to the recommendations for the RNLN and naval planners, four fields for future research are identified. The first is to have a more profound look at civil-military cooperation and related requirements, challenges and opportunities. An excellent starting point to strengthen such cooperation is provided within the existing cooperation within the Dutch Coastguard model. An analysis applying the *Organizational Behaviour Model* possibly results in valuable insights and contributions to strengthen the civil-military cooperation within the Dutch Coastguard.

Second, this thesis conducts the research from a rational actor perspective. The conduct of research based on the other two models, *Organizational Behaviour* and *Government Politics Model*, focussed on decision-making processes for new capabilities within the RNLN and MoD would be valuable additions to this thesis.
Finally, the amount of data available and acquired by networked sensors is rapidly increasing. A joint (shore-based) tactical and operational level intelligence fusion capability is possibly a solution in efficiently fielding scarce resources, such as intelligence analysts, and complying with limited transmission bandwidth availability. But such concepts need more conceptual backing before becoming a reality.
APPENDIX A. RECORD-TOPIC MATRIX

To support the (qualitative) data selection, the thirteen interviews held were coded in this ‘record-topic’-matrix. Within the text of this thesis footnotes refer to this record-topic matrix. The record (R₁-Rₙ) represents each interviewee and the topic (T₁-Tₙ) points to the core answer (and quotes used identified by ‘*’ added) to each of the questions of the semi-structured interviews. To limit the volume of this thesis and to maintain the anonymity of the interviewees, the approved summary and electronic recording of each interview are in my private archive.
Figure 12. Record-topic matrix

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<td>Respondents or Interviewees</td>
<td>Researcher 1</td>
<td>Naval Doctrine, R&amp;D, Active naval officer MOD/PLANS</td>
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<td>R₁</td>
<td>Naval Doctrine, R&amp;D, Active naval officer MOD/PLANS</td>
<td>From innovation driver to follower. New trends: Nano-technology, Moore’s law, constabulary role, energy transition</td>
<td>Launching customer yes or no, Niches are a political choice (balanced fleet, or specialization) Tension between DIS and MoD requirements *</td>
<td>Broad focus on all three roles. Do not forget the military basis</td>
<td>Budget</td>
<td>Accept reduction in quality. How to replace present capabilities</td>
<td>Present fleet size a good mix. Amphibious capability questionable. Rather tankers than JSS</td>
<td>Limited effect. Task division will remain similar</td>
<td>Lack of an integral fleet plan</td>
<td>Lack of innovation funds. Only half of the EDA-norm. Platform development long term innovation, contrary to short innovation as seen in IT-sector. *</td>
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<td>R₂</td>
<td>Dutch Maritime Strategy, Scholar, NLDA, Active naval officer</td>
<td>Globalization continues. Increase in the use of the sea as a resource Impact on Dutch policy questionable, based on ‘strategic poverty’</td>
<td>Niche discussion is full of rhetoric No choice between basic capabilities and niches. Need balanced mix. Europe may be forced from security consumer to security provider</td>
<td>No strategic focus. Able to operate throughout entire range of intensities of conflicts. OPV poor choice</td>
<td>No strategic vision. Push from military, civil servants, and other stakeholders *</td>
<td>Security at sea. Power projection less important</td>
<td>Regional focus from Arctic to Strait of Hormuz.</td>
<td>Limited effect. Increase in information exchange</td>
<td>Sea control fleet with MSO capabilities. Similar to 1990’s fleet</td>
<td>Requirement for an integral long term fleet replacement plan (delta plan)</td>
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<td>R₃</td>
<td>RNLN, DOKM</td>
<td>‘Security comes natural’ this Netherlands is hub of sea, Escalation dominance.</td>
<td>Budget. 2017 elections</td>
<td>Submarines and frigates.</td>
<td>Internal security, external</td>
<td>Task division acceptable</td>
<td>OPV no escalation</td>
<td>International cooperation</td>
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<td>Active naval officer</td>
<td>thinking slowly changing. Natural tendency for isolationism. Climate change, raw materials and resources scarcity, increase in population</td>
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<td>air, and information transport. Increase in A2AD capabilities. Burden sharing</td>
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<td>Need to increase striking power. Tripwire function Increase in number of platforms All levels of conflicts, OPV insufficient. BMD Platforms and systems modular</td>
<td>crucial. Goal of present NATO-spending average too low because of increase by neighbouring countries. Hope of increased budget</td>
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<td>But also New investments in ISR capabilities and Cyber security. However, how and size presently unknown. Strategic enablers positioned at national level. Left of the conflict curve.</td>
<td>security, and flow security. Focus and energy focused on the left of conflict curve</td>
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<td>Increase in A2AD capabilities.</td>
<td>when it enables military assets to focus on military tasks</td>
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<td>Burden sharing</td>
<td>possibilities. BMD, policy note IHBVNL impossible to be executed</td>
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<td>R₄</td>
<td>Naval Plans, Active naval officer MOD/PLANS</td>
<td>Drivers for change: Increase strategic rivalry state-actors. Ecological and demographic effects. Values-conflicts. Digital information revolution. requirements: Escalation dominance (extent TBMD and land attack capability), Cyber/Information domain under CHOD, Type and number of required personnel. Difference in long</td>
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<td>No longer basic capabilities and niches. Three goals: Internal security. External security, Flow security. For navy this means SLOCs and forward deployed. Other trends: Energy transition, SOF</td>
<td>Return to high-end warfare and the military role. When situation allows other two roles, Return to the blue water navy. No new OPV’s.</td>
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<td>Influence of politics, industry and the navy. 2017 election crucial, almost all parties accept the difficulties of the MoD. Industry pretty desperate. Need launching customer. In most countries defence-industry seen as strategic asset, not so in the Netherlands Navy limited influence. No budget to invest. Value of the triple helix not seen</td>
<td>Navy: global MoD regional Not east of Suez. Diplomatic role to be increased when supported by Foreign affairs.</td>
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<td>Real European Coastguard is a utopia. Will remain different entities. Naval platforms need to be ready for high end warfare Design with multi mission bays for other than war tasks</td>
<td>Capable fleet is good</td>
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<td>Requirement for a long term integral fleet replacement plan.</td>
<td>good, careful to discard core capabilities. Burden sharing</td>
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<td>R1</td>
<td>TNO, Naval Study 2005, Maritime Vision 2030, R&amp;D, former naval officer</td>
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<td></td>
<td>Impact Singularity University thinking. For navies more long term innovation than short term innovation Dual-use and cross-over opportunities</td>
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<td>Sensor and weapon development based on Moore’s law. Significant increased amount of data collection. Maritime/Naval principles have not changed. Enablers change Increase in number of actors at sea. Impact on policy limited. *</td>
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<td>Niche: limited availability, but in high demand, you are good at it Area of choice because of global interests Niches: Expeditionary Submarines BMD MCM</td>
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<td>Escalation dominance. Credible deterrence or show of force. This requires ships that make a difference across the types of conflict</td>
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<td></td>
<td>International cooperation crucial but not well imbedded in MoD. Four liaisons for int cooperation: Gov-gov Mil-mil Industry-industry Tech-tech Cialdini’s six principles of influence</td>
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<td>Return to fixed mechanism of budget division. Marechaussee to National Police Long term budget fixed fleet replacement plan. Budgets back to the individual services</td>
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<td></td>
<td>Global and throughout all levels of conflicts Butterfly principle Tripwire function</td>
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<td></td>
<td>Limited effect. High seas capability Increase in sharing information (new niche)</td>
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<td></td>
<td>Submarines are essential capability. Combine LDF with LCF. Specific ASW capability</td>
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<td>R&amp;D budget too low. Half of the EDA-norm (2%). We need 2.5% for innovation is our strong point. Budgets with individual services, because of different requirements (long/short term innovation)</td>
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<tr>
<th>R6</th>
<th>Clingendael, EU-focus, former army officer and civil servant</th>
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<tr>
<td></td>
<td>Change from multilateral to multipolar system. EU focus on border security with investments not automatically in navies. Wide range of assets necessary *</td>
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<td>Submarines, MCM, and frigates necessary. Type and character open to discussion</td>
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<td>Balanced focus, all roles important. Increasing training missions</td>
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<td>Current events most important. Long term defence planning promoted *</td>
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<td></td>
<td>Central guidance required. Priority with RNLN. Reconsider SM procurement. No strategic thinking at political level</td>
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<td>European focus due to budget limitations</td>
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<td>Dutch model leading in EU. Small steps within EU driven by real world circumstances</td>
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<td>EU fleet NATO fleet with limitations Credible Dutch international contribution</td>
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<td>Dutch- perspective, not just RNLN. Role RNLN with failed states and terrorism?</td>
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<th>R7</th>
<th>MOD General Policy, former army officer</th>
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<td>Strategy to policy not logical System thinking: NL</td>
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<td>Increasing number of No influence. Common interests New financing Dutch Strategic thinking reduced</td>
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<td>Maximise RNLN support Loose the four stroke, -</td>
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<tr>
<th>RNLN, EUMSS, Active naval officer</th>
<th>Industrial-politics driven Financing mechanism Launching customer important Economic diplomacy</th>
<th>Trade System country. Allows NL to punch above its weight. Flow security. Unique selling point RNLN, MoD Strategic thought leadership **</th>
<th>No consistency Wide scope on strategy definition</th>
<th>structure required. Continuous production instead of batches. Four stroke highly questionable Multi crewing Public support essential</th>
<th>Withdrawn Behind dikes</th>
<th>to NLCG Constabulary role growth market</th>
<th>standardize Increase sea days of platforms Invest political capital in specific niches. ADCF with TBMD and TLAM is game changer</th>
</tr>
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<tr>
<td>R₄</td>
<td>Coastguard Naval Industry, former naval officer</td>
<td>NL Enabler, supporting role Battles and challenges in the Economic domain Stability driving factor. Containment-policies Migration challenges. NL has no grand strategy. Stability driving factor. *</td>
<td>Shipbuilding of high tech niches &amp; innovation. Security mechanism prevents level playing field DIS and DMS but government does not really follow-up on this in comparison with other EU countries. Innovation versus tendering. *</td>
<td>Credible deterrence Balance high-end and budgets focus on entire chain not just the platforms</td>
<td>Budget Importance of interests and history of Services and research institutes (not neutral). Rational model limited use Constants are frigates and niches. Disconnect timeline politics and military capacity building</td>
<td>European cooperation. Consensus separating platforms and systems. How to deliver a capability. Innovation opportunity. Defence and industry cooperation. Dependence on industry increasing. Remote big data analysis, possible solution but requires new contracts</td>
<td>Quantity=quality for presence at sea Crossover concept of frigates and amphibs. More suitable for constabulary role Possibility to add more high-end modules. Global ops for influence</td>
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<tr>
<td>R&lt;sub&gt;0&lt;/sub&gt;</td>
<td>MOD/Plans DOKM, Active naval officer</td>
<td>Territorial &amp; home security, external security, flow security. Information revolution, technological developments, change of role of people, corporate agility, conflict prevention in the front-end of the conflict curve, robust logistics, information dominance, requires 'open' network to share data and intelligence. Escalation dominance. **</td>
<td>NATO shortfalls are niches. Focus high tech capabilities. Increase in R&amp;D to minimum of 2%. Do what we're good at. NL can make a difference with niches. BMD, Patriot, SM, SOF, and other highly advanced capabilities. International cooperation does not result in budget savings. Military and Diplomatic role important and well beyond EEZ. Singularity university thinking counter argues this somewhat. Internal and external security intertwined. Traditional separation between security actors no longer valid. Hybrid warfare requires all three roles. In the end they are political decisions, thus political interests. These can be divided in political return on investment, international context, Dutch industry, and the phasing in time, government coalitions, and support inside and outside the MoD. Burden sharing provides influence in international politics. Present 16% short on MoD budget, or 1.1 billion euros. This would require approx. 20% capability reduction, if not compensated. The choices will be based on rational, organizational and political decision-making. Will result in external pressure on the RNLN because of the scheduled future investments.</td>
<td>The choice has less impact on the RNLN than on the RNLA and RNLAF. Territorial and Flow security both demand a naval expeditionary capacity.</td>
<td>Only small changes. Networking, information-sharing reduces this problem. Complementary and not having overlapping capabilities are important</td>
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<td>R&lt;sub&gt;10&lt;/sub&gt;</td>
<td>HCSS, Scholar</td>
<td>Deterrence and crisis management, migration, power shift to the (Far) East, multipolar world, technological developments, general increase in global welfare and poverty reduction. Great Power game has returned. *</td>
<td>Protection of SLOC, 'Custodian of security' because MoD is a strong player in the ecosystem, diplomatic role within ecosystem of security partners *</td>
<td>No strategic focus. All roles important. With migration constabulary role remains Dutch interests demand non-free-rider behaviour. Diplomatic role core competence in Power shift from service commanders to CDS with regard to defence procurements. Impacts navy the most. DIS importance will increase. Certainly for RNLN, otherwise with foreign designs, return to a generation older. Requires complete strategic redesign</td>
<td>Peripheries of Europe. Arctic focus doubtful. Ocean-going submarines niche. ABNL cooperation essential for sufficient scale in development and operations.</td>
<td>Internal and external security intertwines. Defence part of an ecosystem of security partners. Primarily in the diplomatic and constabulary role.</td>
<td>Basic: Affordable, but limited. Extremely narrow focus of vital interests. Basic Ext: Crisis response capability. Relatively cheap a powerful</td>
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promoting security

ships or much more expensive. Due rate of technological development, adaptability at capability-level important

niche TBMD capability. Cap. Fleet: Deterrence important in geopolitical dynamic

| R11 | NCTV, NSS, active civil servant | Key timeframe national elections 2017 for budget allocation. Geopolitical instability near Europe. Migration. Jihadism/Salafism. Increased social and political instability with reducing EU-support. Hybrid warfare and disruptive technological developments. ‘WRR advice in progress with regard to nexus of internal and external security. All this requires whole-of-government approach. Example is the interdepartmental working group ‘drones’ | Public-private cooperation, Triple helix. Need for long term thought on how the Netherlands will earn its money over 30-50 years | Border-security, disaster relief, pro-active approach required, interagency personnel exchange and cooperation | Coalition Agreement and political constellation are very important. No significant budget increase expected. Top-level personnel changes provide opportunities to increase intergovernmental cooperation. International developments have an unpredictable impact on budgets |
|     |                             | Large troop deployments are a thing of the past. Netherlands a more ad hoc than strategic approach in supporting Dutch interests abroad. Security Sector reform effectiveness doubtful. Intensify Civil military cooperation. NCTV little focus on North Sea. | No real vision or opinion from within NCTV. But the armed forces should be jack of all trades, and be small, but flexible, temporarily, worldwide deployable force | Whole-of-government approach improving and will continue, but traditional thinking remains strong. |
|     |                             | - | - | Support society |

| R12 | Foreign Affairs, active | Perceived insecurity will | Disagree with WRR report. All three roles, no focus | Politics also rational. State | Defence as an instrument will | - | - | Support society |

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<p>| R1 | NATO/EU DS/DPLAN Review EU / NATO strategy. Active army officer. Renewed importance. SLOC’s. Nato strategy of the. Reinforcement strategy complemented by Forward Presence. Expected to be confirmed during Warsaw Summit. | EU/NATO cooperation. Dual-use technologies required for EU budgets. Also supports reinforcement strategy. Vulnerability SLOC’s. Hybrid environment or “under the threshold of art 5” Third Offset Strategy. Dominance via AI and UXV. Risk, countries who can’t follow this trend. Chance: EU Preparatory Action. Deterrence only credible thru capabilities and Two things first: EU/NATO decisions making forces ad hoc coalitions. NL wants to maintain forward edge of high-tech capabilities and Dutch military natural ability to operate in coalitions. NATO article 3 counters task specialization, solution framework grouping nations, together provide capability. | Maintain balance: military role towards Russia, constabulary role in Mediterranean. Diplomatic role via growing importance of capacity building. SLOC’s cross Atlantic important. Solved by large nations. Deterrence of A2AD requires LCF with BMD-shooter, land-attack, and C2 capability. Prio 2: Power projection of SOF elements instead off battalions. Prio 3: protection SLOC’s, with focus Med and Arabian Gulf. | Dutch military ambitions unachievable with present budget according to NATO. Prio 1: LCF with BMD-shooter, land-attack, and C2 capability. Prio 2: Power projection of SOF elements instead off battalions. Prio 3: protection SLOC’s, with focus Med and Arabian Gulf. | In new EU Global Strategy collective defence also inside EU. Public-private cooperation will increase, especially below high-intensity conflict operations. Cooperation and task executing between armed forces and civilian agencies will interchange relatively seamlessly. C2 will change depending on particular situation. |</p>
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<th>actions.</th>
<th>packages.</th>
<th>including cyber domain. Politically difficult</th>
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Source: interviews held by author
APPENDIX B. FREQUENCY TABLE

As part of the research strategy, as described in chapter III, a frequency table is added, this can be seen in Figure 13.

Figure 13. Frequency table of quotes and core answers

![Frequency table of quotes and core answers]

Source: author

The number of quotes and core answers used from each of the interviewees were put into this frequency table in order to provide insight, to prevent unintentional bias and/or identify significant deviations of the variables. The vertical axis shows the number of quotes or core answers of each interviewee. The horizontal axis represents each individual interviewee, coded from R1 to R13. The blue colour represents the (number of) quotes and orange the (number of) core answer of each interviewee.
The quotes in this thesis are primarily used to illustrate and enrich both the justifications and rebuttals of the core arguments. The difference in the number of each interviewee’s core answer used can mainly be attributed to the scope of subjects addressed in the answers each interviewee provided.
APPENDIX C. GUIDING INTERVIEW QUESTIONS

T1. How are/were you involved in the drafting of (maritime) security strategies and/or the future fleet requirements?

T2. In your opinion, which trends will be most influential on Dutch national policy objectives and how will these trends impact the national policy objectives?

T3. In your opinion, how are the niches within the maritime domain on which the Dutch government wants to focus established, and how do you expect these niches will change over time?

T4. In your opinion, considering the three naval roles, what should be the strategic focus for the RNLN for the next decades?

T5. In your opinion, what is the strategic decision-making context, and how will this influence the RNLN future fleet capabilities?

T6. In your opinion, considering the defence budget, what strategic choices should the naval planners make in the next 20 years, and why?

T7. In your opinion, how should the RNLN operate to maximize support of the Dutch maritime interests in the next decades? (local/regional/global, focus, tasks)

T8. In your opinion, how do you expect institutional thinking and the possible division of (maritime) tasks between governmental institutions will influence the translation of maritime plans into naval requirements in next two decades?

T9. What is your opinion with regard to the following hypothetical fleet compositions?
   a. Vignette one
   b. Vignette two
   c. Vignette three

T10. In your opinion, which important question wasn’t asked, and what would have been your answer?
APPENDIX D. VIGNETTES

The goal of the use of vignettes, with different types of navies, was to provoke opinions, identify fears, challenge traditional Dutch naval thinking, identify common and distinguishing ideas between interviewees, enrich my research, and use operational solutions in support of strategic thinking. The goal was not to select the required future RNLN fleet composition. The three selected fleet compositions, and their estimated costs, were only to support these goals and drawing other conclusions from these compositions would ignore the limited scope intended.

A. BASIC FLEET

Focus of the basic fleet is vital national tasking only, and a minimum commitment to NATO. The basic fleet consists of:

- Four Oceangoing Patrol Vessel (OPV)
  - Organic NH90 Helicopter
  - For one permanent forward deployed West Indies Guard Ship
  - € 600 million

- Seven Multi-Purpose Vessels (MPV)
  - One type for general coastguard duties and specific missions
  - Three modules for permanent MCM capability within Dutch EEZ
  - Three modules for permanent hydrographic services within Dutch EEZ
  - One for combat service support in the Caribbean
  - Example: Damen Multi-Purpose vessel 8116
  - € 400 million

- Four Hybrid frigates
  - For one permanent forward deployed with SNMG 1 or EU equivalent
  - Traditional naval roles: ASuW, ASW, AAW self-defence, NSFS
  - Disaster relief, hospital ship, Command & Control, limited transport
  - Based on lessons learned Danish Absalon-class
  - Organic NH-90 and UXV’s
  - € 2 billion

- Total investment: € 3 billion

- Annual Defence investment requirement for the next 20 years:
  - € 150 million or,
1.9% of € 8 billion defence budget (1.1% GNP, present)
1.5% of € 10.1 billion defence budget (1.43% GNP, average NATO)
1.1% of € 14.2 billion defence budget (2% GNP, NATO norm)

B. EXTENDED BASIC FLEET AND NICHES

In addition to the basic fleet goals, this vignette incorporates the present amphibious capabilities, integration of the RNLMC, with the British and German counterparts, the strategic sealift capability, and extended ballistic missile defence as a niche to NATO. It only has a surface fleet capability and consists, in addition to the basic fleet, of:

- Four Air Defence and Command Frigates
  - Primary Ballistic Missile Defence capability (sensor and shooter)
  - Permanent forward deployed stationing possible
  - Secondary Area Air Defence capability
  - Same hull as Hybrid FF to reduce Life Cycle Costs
  - Niche
  - € 3 billion

- Two Amphibious Command & Drone platforms
  - Amphibious capability for Navy/Marine Corps team
  - UK/NL/GE ATG
  - Maritime Combat Operations from the sea
  - Includes landing craft and UXV’s
  - € 800 million

- One Joint Support Ship
  - Provides Replenishment-At-Sea capability, logistic sustainability
  - Strategic Sealift (Niche)
  - € 400 million

- Total investment: € 7.4 billion

- Annual Defence investment requirement for the next 20 years:
  - € 370 million or,
  - 4.6% of € 8 billion defence budget (1.1% GNP, present budget)
  - 3.7% of € 10.1 billion defence budget (1.43% GNP, average NATO)
  - 2.6% of € 14.2 billion defence budget (2% GNP, NATO norm)
C. CAPABLE FLEET

The capable fleet has a large range of conventional military capabilities, except long-range maritime patrol aircraft. NATO UAV, and other military and civilian maritime surveillance capabilities will in part cover this lacking capability. The capable fleet consists, in addition to the ‘extended basic fleet and niches’, of:

- Five additional MPV’s
  - For one permanent forward deployed with SNMCMG or EU equivalent
  - One as submarine service support ship, including torpedo recovery
- One additional JSS
  - Permanent availability for operations
  - Not permanent forward deployed
- Four expeditionary capable submarines
  - Long range, oceangoing submarines
  - Land Strike capability
  - SOF capable
  - Organic UXV’s
  - € 4 billion
- Total investment: € 11.8 billion

- Annual Defence investment requirement for the next 20 years:
  - € 590 million or,
  - 7.4% of € 8 billion defence budget (1.1% GNP, present budget)
  - 5.8% of € 10.1 billion defence budget (1.43% GNP, average NATO)
  - 4.2% of € 14.2 billion defence budget (2% GNP, NATO norm)
APPENDIX E. ANALYSIS OF MARITIME STRATEGIES

The first step in order to establish the goals or national policy objectives and the naval capability requirements for the Netherlands, is an analysis of the relevant international and national maritime and security strategies. First, the NATO’s Alliance Maritime Strategy and the European Union Maritime Security Strategy are analysed. After the international focus, the national documents will be analysed in sequence of their year of publication.

1. International governing documents and policies

   a. NATO’s Alliance Maritime Strategy (2011)

      The main objectives of NATO are the defence and security of its member-states, and to promote its values. In recognizing the seven maritime trends, as described in chapter two, NATO sees a new emerging geopolitical context. To be able to effectively defend the Alliance and promote its values this requires a transformation in the capabilities of its member-states.

      The Strategy identifies four roles for maritime forces to provide strategic options for NATO: (1) Deterrence and collective defence, (2) cooperative security: outreach through partnerships, dialogue and cooperation, (3) crisis management, and (4) maritime security. The first roles are the classic military and diplomatic role in the Span of Maritime Operations. Assessing the tasks identified for crisis management these fit well together with maritime security in the Span’s third or constabulary role. As such a changing world according to NATO has not resulted in new roles or a strategic focus between those roles for its maritime forces.

      The strategy, next to the traditional naval tasks across the entire naval spectrum ranging from mine countermeasures, the control of the SLOCs, power projection, to
nuclear deterrence, does provide some insight in the new or changing requirements for its naval assets. First, to support NATO’s freedom of action requires reconnaissance and high precision assets. A good example is the present acquisition by 15 member states of the Alliance Ground System (AGS), also known as the Global Hawk high altitude long endurance unmanned aerial vehicle. AGS is to provide an all-weather, persistent wide-area terrestrial and maritime surveillance capability in near real-time. Second, to deal with the increased proliferation of advanced weapons such as ballistic weapons its maritime forces are to provide a sea-based ballistic missile defence capability in order to protect forward deployed NATO forces and NATO’s territory. These first two points are also identified as critical military shortfalls within the capabilities of NATO (NATO 2015). Finally, it states that NATO needs to remain able to confront both traditional and asymmetric threats. As a result, member states, according to NATO, need to continue the development of capable, flexible, rapidly deployable, interoperable and sustainable maritime forces.

b. EU Maritime Security Strategy (2014)

The European Union Maritime Security Strategy (EUMSS) goal is to secure the maritime security interests of the EU and its Member States against a wide range of

\[113\] The AGS system consists of air, ground and support segments, performing all-weather, persistent wide-area terrestrial and maritime surveillance in near real-time. The AGS will be able to contribute to a range of missions such as protection of ground troops and civilian populations, border control and maritime safety, the fight against terrorism, crisis management and humanitarian assistance in natural disasters. The AGS system also includes European-sourced ground assets that will provide in-theatre support to commanders of deployed forces. The AGS system is being acquired by 15 Allies and will be made available to the Alliance in the 2017-2018 timeframe. For more see http://www.nato.int/cps/en/natolive/topics_48892.htm

\[114\] Others are for instance: Cyber Defence, Counter-Improvised Explosive Devices, Joint Intelligence, Surveillance and Reconnaissance, and Strategic Airlift. (NATO 2015)

\[115\] Maritime security, in the EUMSS, is understood as a state of affairs of the global maritime domain, in which international law and national law are enforces, freedom of navigation is guaranteed and citizens, infrastructure, transport, the environment and marine resources are protected.
threats and risk in the global maritime domain. The EUMSS provides four guiding principles, eight maritime security interests of the EU, and the maritime threats and risks identified. Within this geopolitical context all maritime trends identified in chapter two can be traced in the EUMSS.

The EUMSS selects five focus areas or lines of approach to achieve these goals. The first focus area is external action by the application of the wide range of mutual supporting instruments, including Common Security and Defence Policy (CSDP), available to the EU. The objective is to promote better rules-based maritime governance. The second area is maritime awareness, surveillance and information sharing. The ultimate goal is a common validated maritime awareness picture to increase operational effectiveness and the optimal deployment of scarce assets, including space-based assets and other remote sensing capabilities. The third area is capability development mainly by

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116 The EU’s guiding principles are: (1) cross-sectorial approach, (2) functional integrity, (3) respect for rules and principles, (4) maritime multilateralism (EU 2014, 4-5).

117 EU’s and its Member States’ strategic maritime security interests are (1) the security of the EU, its Member States and their citizens; (2) the preservation of peace (3) the protection against maritime security risks and threats, and the promotion of scientific research and innovation projects; (4) the preservation of the freedom of navigation (5) the protection of economic interests. (6) the promotion and development of common and validated maritime situational awareness; (7) the effective management of the Union’s maritime borders and maritime areas of EU interest in order to prevent and counter cross-border illegal activities; (8) the protection of the environment and the management of the effects of climate change. (EU 2014, 6-7)

118 Identified threats and risks by the EU: (1) Threats and use of force against member states’ rights and jurisdiction over their maritime zones; (2) Threats to the security of European citizens and to economic interests at sea following acts of external aggression; (3) Cross-border and organized crime; (4) Terrorism and other intentional unlawful acts at sea and in ports against ships, cargo, crew and passengers, ports and port facilities, and critical maritime and energy infrastructure, including cyber-attacks; (5) Proliferation of weapons of mass destruction; (6) Threats to freedom of navigation; (7) Environmental risks; (8) Potential security impact of natural or man-made disasters, extreme events, and climate change; (9) Illegal and unregulated archaeological research and pillage of archaeological objects (EU 2014, 7-8).

119 The trends ‘Military (including naval/maritime) presence and intervention in locations not previously considered of vital interest’ and ‘proliferation of advanced technology’ are not explicitly mentioned. However, the former can more or less be deduced from its intentions. An example would be the EU anti-piracy operation, ATALANTA, around the Horn of Africa. The latter can be found in the third focus area of the dual-use of new technologies, which can work to the advantage but also to the disadvantage of the EU.
the development of dual-use technologies, standardisation, and certification. This is of importance because, similar to NATO, (military) capabilities are owned and deployed by member-states. Fourth, risk management, protection of critical infrastructure and crises response. The impact of mainly climate change and associated future risks and disasters requires a continuation of development in this area. Finally, to support the other four focus points, maritime security research and innovation, education and training.

The first two focus points are of particular interests to navies and coastguards. The EU recognizes that within sovereign states the division of tasks to safeguard the maritime security interests are organized differently. Whether these tasks are executed or shared by navies, coastguards, military, and/or civilian organizations. Within the Netherlands the RNLN and Netherlands Coastguard are different organizations. The Dutch government, at present, does not want the deepening of this cooperation to lead to a change in tasks, authorities, and responsibilities (Dutch Ministry of Foreign Affairs 2014, 3).

Because as the armed forces and their respective capabilities are the sovereign prerogative of the individual EU member states, the EUMSS is short on the means or capabilities necessary or available to achieve the goals set forth. This is why the EUMSS is a strategic concept, like a vision statement to guide or foster change, rather than a true strategy.121

120 The Netherlands Coastguard carries out 15 tasks of five different ministries. The NL Coastguard is controlled by the Coastguard Fourmanship (KW4) that can be seen as a daily management. Chairman of the KW4 is the Director North Sea of the Ministry of Infrastructure and the Environment (the coordinating Ministry for Coastguard affairs). Other members are the Chairman of the Law Enforcement Committee North Sea, the Director Planning and Control of the Royal Netherlands Navy (operational administrator of the Netherlands Coastguard) and the Director Netherlands Coastguard (Netherlands Coastguard 2016).

121 ‘A strategic concept is more akin to a strategic vision statement designed to guide and foster change in an organization. It therefore lacks the specifics that one might expect in a true strategy’ (Work and van Tol 2008, 5).
This is confirmed by the Dutch government, in a letter to Parliament, which regards the EUMSS not as a blueprint, but as a broad direction and guidance framework. The associated action plans should provide more concrete details with regard to the activities to be employed by the EU and the cooperation between military and civilian actors within the maritime domain. The deepening of this cooperation should not lead to a change in tasks, authorities, and responsibilities (Dutch Ministry of Foreign Affairs 2014, 2-3).

The EUMSS was followed-up by the EUMSS (rolling) Action Plan (EU 2014). It is a five-year program, which consists of 130 points. These action points are divided along the five focus points of the EUMSS. The most important areas for the maritime domain are cross-sectorial cooperation and interoperability, maritime surveillance capabilities\textsuperscript{122} and assets, information sharing, cyber security, and the exploring the use of dual-use technologies and platforms. Some argue that this action plan does not adequately address coordination and the division of labour between actors involved and subsequently most likely leads to inaction (Landman 2015, 4). However, with the present large-scale migration towards Europe this could change rapidly.

When applying the three roles of navies, in accordance with the Span of Maritime Operations, the EUMSS seems more focussed on the diplomatic and constabulary roles than on the military role. In comparison with the NATO maritime strategy the EUMSS has a wider and more encompassing, or comprehensive, approach. This is not illogical considering the origins of, and instrument available to, both organizations. NATO originally a narrower focussed political-military organization, and the EU a much more political civil-socio-economical organization. As such the EUMSS appears complementary to the \textit{Alliance Maritime Strategy}. This also makes sense as each has 28

\textsuperscript{122} These include space-based systems, maritime remotely piloted aircraft systems, shore-based infrastructures, innovative sensors to detect small vessels, and novel platforms for continuous surveillance.
member states of which 22 are member of both organizations. The EU-NATO strategic partnership, confirmed by NATO at the Lisbon Summit in 2010, and mentioned in both strategies underlines this (NATO 2015). Although in practice this does not mean that, at present, both organizations work effectively together at all fields and at all levels (Reichard 2013).

Not in contradiction to before mentioned, the EUMSS does address the military role of navies but less in-depth than the Alliance Maritime Strategy. In a more or less non-binding manner the EUMSS states:

Member States’ Armed Forces should play a strategic role at sea and provide the global reach, flexibility and access that enable the EU and its Member States to contribute to the full spectrum of maritime responsibilities. (2014, 10) [italics added]

As the EU has no responsibility over the member states’ navies, it implies the important role navies have at sea to achieve or, to a lesser extent, contribute to the goals of the EU and its member states. But it also directly links this strategic function with the (inherent) attributes of maritime power such navies need to incorporate.123

If member states want to contribute to the full range maritime responsibilities of the EU, outside their own national area of responsibility, their naval forces should incorporate or at least contribute to the characteristics of maritime power mentioned.

123 The Dutch Maritime Military Doctrine, *Fundamentals of Maritime Operations*, identifies five characteristics of maritime operations or maritime power: Mobility, Access, Influence, Versatility, Sustained Reach. (Dutch Ministry of Defence 2014, 91-92). Global reach, incorporates the characteristics of Mobility and Sustained Reach. The ability to operate worldwide, to operate independently, cover great distances, and sustain those operations for prolonged times. With the freedom of navigation, in accordance with International Law, this provides the required access to most areas and the ability to stay there. The flexibility or versatility of naval ships is the ability to execute and/or contribute to all three functions, and naval tasks, of the Span of Maritime Operations.
2. National governing documents and polices


In 2007 the Dutch government released the first National Security Strategy (NSS). This was necessitated by the recognition that a government-wide approach was required to adequately protect its society and population within the Netherlands against internal and external threats.

Although nationally focussed, the NSS does address the international context in which the strategy is positioned. As a member of the EU, NATO, OSCE\textsuperscript{124}, and the UN the Netherlands contributes to the respective security strategies and the opportunities international cooperation offers. The NSS addresses the voids, in the abovementioned international organizations’ security strategies, deliberately left open for national policies and requirements (2007, 24).

The NSS identifies five vital national interests (2007, 10). These vital interests are interdependent and a breach of one could affect the other interests.

1. Territorial security: the undisturbed functioning of the state and maintaining the territorial integrity of the Kingdom.

2. Economical security: the undisturbed, effective, and efficient functioning of the economy.

3. Ecological security: to be sufficiently capable to recover from the degradation of the living environment. For instance, caused by climate change.

\textsuperscript{124} The Organization for Security and Cooperation in Europe (OSCE) has a comprehensive approach to security that encompasses politico-military, economic and environmental, and human aspects. It therefore addresses a wide range of security-related concerns, including arms control, confidence- and security-building measures, human rights, national minorities, democratization, policing strategies, counter-terrorism and economic and environmental activities. All 57 participating States enjoy equal status, and decisions are taken by consensus on a politically, but not legally binding basis (OSCE 2016).
4. Physical security: the undisturbed living conditions within the Netherlands, which can be threatened by among others, epidemics, large-scale flooding, and industrial accidents.

5. Social and political stability: the undisturbed social climate within a democratic constitutional state and the maintenance of shared values.

At present there are three threat categories with nine subdivided threats identified. First, classical threats involve breaches of international peace and security, CBRN-attacks\textsuperscript{125}, terrorism, and international organized crime. Second, socio-economical threats are social vulnerability, cyber-attacks, and economic insecurity. Finally, environmental threats involve climate change and natural disasters, and the outbreak of infectious diseases and animal diseases (2007, 12). As the NSS was published in 2007 the division of national interests as the WRR in 2010 recommend has not been applied.

In the Netherlands the role of the RNLN in providing added value to the protection vital interests is limited to the classical tasks. Main naval tasks are to provide the mine counter measure capability, mainly for the WWI and WWII legacy on the Dutch continental shelf, maritime counter-terrorism capability, the protection of the offshore energy installations, and supporting the Dutch Coastguard. In the Dutch Caribbean this is different.

In the Dutch Caribbean, outside the geographic limitations of the NATO treaty\textsuperscript{126}, the role of RNLN to protect the vital interests of the Kingdom is significant. First and foremost, the goal of the armed forces in general and the navy in particular is to raise the threshold and deter potential aggressors (Dutch Ministry of Defence 2010, 122). Second,

\textsuperscript{125} Attacks using Chemical, Biological, Radiological, or Nuclear weapons

\textsuperscript{126} Article 6 of the NATO treaty limits the purpose of article 5 to territories or islands of Parties north of the Tropic of Cancer (23.5°N) (NATO 1949).
the RNLN provides the backbone of the Dutch Caribbean Coastguard with its tasks of providing maritime law-enforcement and maritime safety. This touches both the classical threats as well as the social and political stability of the Dutch Caribbean. The (potential) impact of the narcotics-related organized crime is significant with regard to the influence upon the social and political stability of the Dutch Caribbean islands (Huurman 2013).

In addition, the supporting role of the navy in providing environmental security is also of great importance within the region. The annual hurricane season and occasional earthquakes are and will remain a continuous threat to the environmental security of the region in general and the Dutch islands in particular. After the devastating 2010 earthquake in Haiti, the Dutch logistic supply vessel, HNLMS Pelikaan, was one of the first ships to enter Port-au-Prince to provide disaster and humanitarian relief (CNN 2010).

The NSS builds on three pillars; (1) analysis of threats and risks, (2) strengthening of capabilities, and (3) ensuring the continuity of the vital national infrastructure. In the near future a quadrennial National Security Profile, which is to provide an overarching analysis of threats and risks and relevant technological and civic developments, will replace the present annual National Threat Assessment. (Dutch Ministry of Security and Justice 2015, 13).

To achieve the strengthening of capabilities a capabilities based planning-approach is used. In this approach, based on the decision-making regarding the national risk assessment, the government assigns priorities to specific tasks, determines the required capabilities to execute those tasks, and identifies gaps or duplication in these required capabilities (2007, 17). Although these are not mentioned in the NSS the methodology has almost become a goal in itself, and its value as a means for getting a message across is limited. The most important question, not only in the Netherlands, is
how do you link risk assessments with capabilities. The next NSS, probably to be released prior to the 2017 general elections, will hopefully address this gap.\textsuperscript{127}

In the eventuality of a major crisis all capabilities of the armed forces are at the disposal of the civil authorities. However, in an evaluation conducted in 2013 the armed forces are increasingly becoming a permanent security partner under regular law-enforcement legislation. At present, further cooperation is investigated with regard to the joint use of unmanned aerial vehicles, command centres, other military facilities and in the long term helicopters (Dutch Ministry of Security and Justice 2014). Within the maritime domain, the future establishment of a joint Navy-Coastguard Maritime Operations Centre is such an example (Royal Netherlands Navy 2015).

\textit{b. International Security Strategy (2013)}

The 2013 \textit{International Security Strategy} (ISS) is an interdepartmental policy document released by the Ministry of Foreign Affairs.\textsuperscript{128} In the contextual analysis of the ISS in addition to the maritime trends identified in chapter II, also identifies the new threats and challenges of digitisation and cyber security, the competition natural resources, and climate change (2013, 3-7). Based on this analysis, the ISS identifies three strategic interests (2013, 8):

1. The defence of our own and our allies’ territory, this also includes counter-terrorism, and to counter the influence and destabilizing effects of organized crime.

\textsuperscript{127} Based on interview with R11

\textsuperscript{128} The International Security Strategy was presented to the Second Chamber of Parliament on 21 June 2013 by the Minister of Foreign Affairs on behalf of the Ministries of Defence, Foreign Trade & Development Cooperation, Security and Justice, Economic Affairs, and the Interior and Kingdom Relations (Dutch Ministry of Foreign Affairs 2013).
2. An effective international order to support the security, stability, and prosperity in the Netherlands with its open economy and limited direct international power.

3. Economic security, by safeguarding (Dutch) trade, the global economic chains, and access to raw materials. This includes maintaining the role as a distribution hub, and digital gateway, safeguarding of the industrial production capacity, and energy supply.

The ISS uses strategic interest instead of vital and extended national interests as recommended by the WRR. When analysing the strategic interests, these appear to be a combination of vital national interests and extended national interest. The defence of national territory and the support of an effective international order by law\textsuperscript{129} categorized as vital national interests, and the defence of allied territory and economic security as extended national interests. Although in a globalizing world, in which national borders disappear, the vital and extended interests also become more and more intertwined.

Realizing its limited influence and forced by spending cuts on defence and development cooperation the government, in line with the recommendations of the WRR to select niches within the broad range of extended national interests, has in addition to these strategic interests selected six focus points:

1. More responsibility for Europe: refers to deepening collaboration with the EU and European NATO-members in order to remain relevant for the rest of the world, including more emphasis on military cooperation to retain sufficient (strike) capabilities within Europe.

\textsuperscript{129} The Dutch constitution article 90: The government shall promote the development of international legal order (Dutch government 2016)
2. Unstable regions near Europe: refers to an increase in the EU’s responsibility and investment into the stability of its neighbourhood.

3. Prevention: refers to a focus on pre-conflict management (including human security and respect for human rights), terrorism, and arms control. But this also includes Dutch coastguard operations in the Caribbean.

4. Disarmament and arms control: refers to increasing efforts for strengthening international legal frameworks for non-proliferation and disarmament.

5. Integrated approach: refers to integrated deployment of the wide range of governmental instruments\(^\text{130}\).

6. Cooperation with the private sector: refers to the support of the economic security by arrangements with the Dutch private sector, which operates throughout the world. Most prominent with cyber security, but also includes Vessel Protection Detachments on board Dutch merchant vessels in the fight against piracy.

Even though the government has specific focus point there remain three constants. First, NATO remains of crucial importance to the security of the Netherlands and is expected to continue its essential role to support international peace and security in regions where its security interests are at stake. As a member of NATO, the Netherlands wants to play its part and requires from the Dutch armed forces to be able to contribute to all forms of intervention in the future (2013, 11).

The second constant is the continued multilateral approach, which is in line with the EUMSS. As a small country the Netherlands can achieve little. Through participating

\(^{130}\) These include diplomacy, defence, development, the police, the criminal justice system, and trade.
and supporting global and regional organizations and institutions, like the UN, NATO, OSCE, African Union, International Court of Justice, and International Criminal Court, the Netherlands promotes international peace, security, and prosperity. Together with international solidarity this supports the increase of prosperity in the Netherlands through the growth of the well-being and prosperity of others outside the Netherlands (2013, 11).

The change in the geopolitical situation since the release of the ISS in 2013, with the annexation of the Crimean by Russia, the associated armed conflict in the Eastern Ukraine, the rise of Islamic State in Syria and Iraq, required the Dutch government to release an update of the ISS at the end of 2014. This policy brief is called ‘Turbulent Times in an Unstable World’ (2014). The policy brief focuses on the most relevant developments in the international security environment, the new security threats, and the consequences for the Netherlands, in addition to those trends and threats identified in the ISS.

The policy brief maintains the three strategic goals and the six focus points. However, it puts even more emphasis on the focus points ‘More European responsibility’ and ‘Unstable regions near Europe’. Complex threats and challenges to the national security interests of the Netherlands are increasing according the ISS and the policy brief. The Dutch government realizes its limitations as a small individual nation. The multilateral approach is therefore assessed to be of even more importance to achieve its national policy goals. The subsequent call for Europe to take more responsibility, in particular on greater burden sharing and increasing international defence cooperation, is at present not supported by an increase in spending in these areas.
On the contrary, despite the 2014 Wales Summit Declaration to increase defence spending to 2% of the GNP in the next decade, spending continuous to decrease. For the Netherlands to achieve a defence spending of 2% GDP requires a 5.9 billion Euro budget increase (Notten 2015). This means an annual structural increase of 600 million Euros, when the GNP remains at the present level. It is too early to draw conclusions if this goal will be met, but the present lack of positive indications does not support optimism.

Similar to the NSS, the ISS is more a strategic concept than a true strategy. But it does, together with the subsequent policy brief, provide (in) direct guidance for future naval capabilities in support of the national policy objectives. First, the ISS explicitly mentions the Smart-L technology on the Zeven Provincien-class Air Defence and Command frigates as specific contribution to NATO’s ballistic missile defence capability.
to protect our allies’ territory (2013, 8). Second, the Netherlands wants to contribute to NATO’s ability to conduct the full range of intervention possibilities. Third, the armed forces need to be flexible and its technological developments need to follow the fast changing environment. Fourth, the armed forces need to be capable to swiftly respond to different kinds of operations, in different areas at the same time, and in sufficient numbers to maintain these operations (2014, 5). Finally, cyber security and operations will continue to increase in importance and will become an integral part of military operations (2014, 16).

As a final development, which further recognizes the increasing nexus between internal and external security, the Dutch government announced in 2015 it will release a new integrated national security strategy in 2016. This new national security strategy will incorporate both national and international security strategies (Dutch Ministry of Defence 2015). The process of security strategy, which started with the release of the separate NSS in 2007 and ISS in 2013, takes the next step in combining both strategies towards a truly national security strategy. Although in line with present strategies, a more appropriate name would probably be national strategic security concept.

c. Policy note: In the Interest of the Netherlands (2013)

The strategic environment, as described by the ISS and NSS, forms the basis of this policy note released after the present Dutch government came into office in 2012. The two goals are to achieve financial durable armed forces apparatus that can handle the present diffuse threats and risks and be affordable in the long term. In order to achieve this durability international cooperation is seen as a necessity, not as a choice (2013, 7-8).

Three main tasks of the armed forces are (2013, 11):

1. Protection of national and allied territory, including the Dutch territories in the Caribbean;

2. Maintaining and promoting international law and order;
3. Supporting civil authorities, nationally as well as internationally, with law enforcement, disaster response, and humanitarian aid.

With regard to military trends the policy note recognizes, based on recent experience, is the expeditionary capability of its armed forces and that military assets need sufficient escalation domination capabilities to achieve political and military objectives. The identified trends such as the increased use of unmanned vehicles, networked operations, the integration of non-lethal effects, and the application of high-grade protective materials are also elements of the naval trends identified in chapter 2. In addition, cyber security and operations has become more and more important. Also the increase in support of civil authorities, under the third main task of the armed forces, with specialist knowledge and equipment continues to expand. At present almost a third of the armed forces are deployed in direct support of national security, ranging from border control, search and rescue, coastguard tasks, to cyber security, and counter-terrorism (2013, 7).

The policy note signals a number of characteristics and/or requirements for the future materiel. Present day operations, and this will continue in the future, requires powerful, high-tech and flexible armed forces with precision strike capabilities. The use of non-precision strike capabilities, with the demands of human security and the high-risk of collateral damage, has become generally unacceptable (Schméder 2006, 300-301). These armed forces need to be able to operate from low to high intensity conflicts and execute all seven strategic functions131. For maritime forces these seven strategic functions are all incorporated in the Span of Maritime Operations and these do not contradict one another.

131 The seven strategic functions are: Anticipation, Prevention, Deterrence, Protection, Intervention, Stabilization, Normalization (Dutch Ministry of Defence 2013, 37)
In order to prioritize between capabilities the policy note distinguishes basic capacities and niches. Basic capabilities are those without the armed forces cannot operate or are required for specific tasks in accordance with national laws. As such these type of capabilities are required to remain within national possession. The core of these are the (maritime) combat units. Budget cuts can be achieved to reduce to numbers of the capability and subsequently reducing the sustainability of this capability, but not to totally divest in these capabilities.

Figure 15. RNLN’s basic capabilities and niches

<table>
<thead>
<tr>
<th>Basic Capabilities</th>
<th>Niches</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combat operations at sea</td>
<td>Submarine capability</td>
</tr>
<tr>
<td>Combat operations from the sea</td>
<td>Ballistic missile defence capability</td>
</tr>
<tr>
<td>Mine-counter-measures capability</td>
<td>Strategic sealift capability</td>
</tr>
<tr>
<td>Hydrographic survey capability</td>
<td>Maritime special operations capability</td>
</tr>
<tr>
<td>Combat service support capability¹³²</td>
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<tr>
<td>Combat support capability¹³³</td>
<td></td>
</tr>
<tr>
<td>Civil authorities support capability</td>
<td></td>
</tr>
</tbody>
</table>

Source: author, from the policy note ‘In the Interest of the Netherlands’

¹³² Service provided to combat forces, primarily in the field of logistics and administration (NATO 2015). In the naval domain this includes for instance the Replenishment-at-sea capability, sea basing.

¹³³ Fire support and operational assistance provided to combat elements (NATO 2015). This includes in the naval and amphibious domain among others, mortars, naval gunfire support, and combat engineers.
Niches are scarce capabilities within the EU and NATO that only a limited number of countries possess. The choice with niches is to maintain or divest the entire capability.

The MoD chooses to maintain a broad range of capabilities and reduce sustainment instead of limited range of capabilities and more sustainability of those capabilities. This points to a typical example of a bottom-up approach\(^{134}\) with regard to the drafting of this policy note. In comparison with a top-down approach (active political guidance) were specific capabilities more often completely abolished, as shown in an analysis of post-Cold War Dutch defence policies (Hoffenaar 2009).

For the near future the policy note prescribes, next to personnel, three themes. The first is to strive to increase the investment quote to 20% in order to maintain the present capabilities in the future. The second is to strengthen operational durability to continue to be able to field operationally relevant capabilities. This requires a shift toward information driven operations and from gathering data to analysing data. But also includes cyber security and operations and the use of unmanned systems. The final theme is to expand and deepen cooperation nationally and internationally (Dutch Ministry of Defence 2013, 23-25).

The MoD’s policy note is the only governing document which connects the goals and required capabilities with the available financial resources. Although one could argue that there is an imbalance between the goals and means provided. Limited available financial resources necessitate a reduction in the capabilities and the sustainment of operations. This is contrary to an international security environment that is increasingly diffuse and unstable and increased threats to the interests of the Netherlands. This is a

\(^{134}\) A bottom-up approach is the traditional approach in which the different Services have leeway in how to achieve the budget cuts. In a top-down approach the Minister of Defence often publicly announces strict guidelines to the armed forces how to achieve the budget cuts. (Hoffenaar 2009, 27,33)
political reality within the Netherlands, and although more and more political awareness is present a significant and structural change should not be expected.

d. Dutch Maritime Strategy 2015-2025

The Dutch Maritime Strategy 2015-2025 (DMS) is the first establishment of a strategic framework by the government together with the Dutch maritime industrial cluster. The goals of this strategy, and the use of the sea, are to maintain a durable international leading maritime role, and to support the contribution of the maritime cluster to the sustainable economic position of the Netherlands (2015, 6,8). The primary focus is on the improvement of cooperation and coordination between the government and the maritime cluster and the mechanism to support this. This strategy is a first, but important, step in a process to achieve the goals set forth.

The DMS signals that normal themes such as job employment, innovation, trade, logistics, safety and environment, are becoming increasingly more complex. A single actor alone cannot address them successfully anymore. This subsequently requires both the Dutch government and the actors with the maritime cluster to take their respective responsibilities (2015, 7). This is also relevant for the RNLN as it contributes to achieving the goals of the DMS by utilising all three naval functions.

The Dutch government will continue stimulating economic diplomacy, guarding and managing Dutch vital interests (2015, 11). Within the context of diplomatic diplomacy, it will do so by continuing with providing operational knowledge and user know-how to stimulate maritime innovation. Second, it will provide opportunities to test or evaluate new products. Third, the navy already has been a launching customer for naval ships, sensors, and capabilities. Acting as launching customer increases the confidence in the products, as they are used under operational circumstances. Acting as a host during trade missions provide Dutch companies with opportunities to show case their (proven) products to potential customers. This confidence cannot be underestimated in order to achieve export contracts in the international defence and security market.
(Dutch Ministry of Defence and Ministry of Economic Affairs 2007, 18). The Dutch government will investigate to expand this practice to other governmental vessels (2015, 16).

Within the context of guarding and managing Dutch vital interests the military and constabulary role of a navy are important in maintaining the freedom of navigation, the undisturbed flow of goods and trade across the seas, and the safety of (Dutch) shipping and (Dutch) seafarers in general. Examples are the counter-piracy operations near Somalia since 2005, embargo operations in the Adriatic Sea between 1992 and 1996, and the RNLN’s operations between 1987 and 1989 during the Iran-Iraq Tanker War.\textsuperscript{135}

\textsuperscript{135} Between November 1987 and January 1989 two Dutch and two Belgian minehunters operated in the Persian Gulf to conduct mine-counter-measures operations against Iraqi and Iranian mines (Dutch Institute for Military History 2009).
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