

# READINESS IN FOCUS



Inter-ministerial policy study on readiness  
Working group report  
Definitive version (adopted on 10 March 2017)

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## Foreword

The motivation for this inter-ministerial policy study on the readiness of the Netherlands armed forces (originally published in Dutch as *Interdepartementale Beleidsonderzoek Gereedstelling: Zicht op Gereedheid*) was the problems with readiness, and the reduced deployability of the armed forces as these were identified in the Netherlands Ministry of Defence 2015 annual report and the 2015 accountability audit by the Netherlands Court of Audit. This is concerning because the worsening security situation in fact calls for higher readiness and better deployability of the armed forces. The working group's remit was to gain insight into the expenditure on operational readiness, and to make proposals that will lead to the improved readiness and deployability of the armed forces.

It is important to the working group that it first of all expresses its great appreciation for the military and civilian personnel of the Ministry of Defence<sup>1</sup>, who pursue our peace and security with dedication, loyalty and professionalism.

Generally speaking, an inter-ministerial policy study produces a variety of options, or 'policy variants', by which the objective can be realised. The working group has, however, decided not to draw up a number of policy variants. The reason for this lies in the nature of the problem. Readiness involves a complex chain of processes and decisions, which cannot be optimised by means of a single measure or instrument. A coherent set of measures is required. The working group has therefore decided to give advice in the form of a single recommendation that is supported by all involved ministries and members of the working group.

This report consists of three sections. The first section provides a summary of the most important conclusions of the study and the corresponding recommendations. The second section consists of the study write-up and findings and the third section contains the appendices.

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<sup>1</sup> Unless otherwise stated, 'the Ministry of Defence' refers to the Netherlands Ministry of Defence.

# Part 1: Conclusions and recommendations

## Conclusions

(1) Readiness is a complex and dynamic process, which at the same time is susceptible to disruption due to the many interdependencies. The extent of the impact of disruptions is difficult to predict, making it difficult to take the right corrective measures in good time. Because of the fragility of the process, the limited volumes and the at times sub-optimal capabilities, disruptions can have a disproportionately large impact. This is primarily visible during deployment, particularly long-term deployment.

(2) The working group finds that the Ministry of Defence is already putting great effort into providing insight/greater insight into the readiness process and is succeeding, in any case with regard to financial data. In comparison to armed forces in other countries, the situation and state of affairs in the Netherlands is, generally speaking, not worse or exceptional; the readiness process is a complex and challenging process for all armed forces. The Netherlands scores markedly better for some aspects and, with regard to international collaboration, it leads the way. The Netherlands armed forces are 'international by design'. The dedication of the personnel is also a 'force multiplier'. Without their personnel, the armed forces would not be able to deliver the performances they are currently delivering.

(3) The working group investigated four specific capabilities (C-130 transport aircraft, landing platform docks, a mechanised battalion and an airmobile brigade battalion). Because of a lack of fixed readiness standards and a lack of sufficient data on operational output, it proved impossible to describe the relationship between the available budget and the readiness process. Experience has shown that exogenous factors almost always impact the readiness process, as a result of which the level of readiness is almost never realised as planned. This means the realised outcome will often deviate from the planned and forecast outcome. The conclusion is that a budget that is consistent over time will not always result in an equally consistent level of readiness. As a result, it is not possible at this point to gain insight into the extent to which budget changes lead to a change in the readiness and deployability of the armed forces. There are various reasons for this. While the Ministry of Defence has a detailed cost-information system, it does not have sufficient stable and detailed data on operational output (readiness) to make it possible to build a dynamic model with insight into the levels of readiness (i.e. a 'cost-to-readiness' model). It is nonetheless possible to calculate costs per capability and to map out the costs for certain types of deployment. Research into partners of the Netherlands has shown that none of the countries investigated had a well-functioning cost-to-readiness model available.

(4) Over the past twenty-five years, the Netherlands armed forces have been substantially reduced in size and reshaped. During the Cold War, the armed forces' operational main effort was focused on 'readiness' for deployment in the event of a large interstate conflict. In the 1990s, the main effort shifted from 'deployment' to crisis management operations. The current security situation calls for armed forces that are 'ready' for an interstate conflict and are also 'deployable' for crisis management operations and national tasks. This is partly due to the increasing interwovenness of internal and external security.

(5) The working group finds that for the structural realisation of readiness it is crucial to have sufficient 'enablers' available (i.e. combat support/CS and combat service support/CSS). Increasing and reinforcing the availability of enablers will increase the readiness and deployability of the armed forces. The availability of timely and sufficient budget for the necessary replacement investments is a precondition. Existing agreements to carry over/be able to carry over in full the underspending on the investment budget to the next year in order to prevent the investment budget being used for regular operating costs go some way to 'protecting' the investment budget. Initiatives to implement the investment programme in a stricter project-based form will also positively impact the timely realisation of the investment plans.

(6) The reduction of the armed forces as a result of cutbacks and policy choices has resulted in armed forces with a broad set of capabilities which (in some cases) are available in limited numbers and with limited sustainability. The capabilities are not always fully standardised, for example with international partners. This blocks the Ministry of Defence from gaining from economies of scale and denies the armed forces the operational redundancy required for sustainability.

(7) With the reduction in size of the armed forces and the defence budget in real terms, direction became increasingly focused on efficiency measures. As a result, many supporting capabilities and systems (the above-mentioned 'enablers') were centralised or pooled. At the same time, units for a variety of tasks were offered to different organisations. The 'double hatting' or 'triple hatting' of units does not turn a 'single set of forces' into a 'multiple set of forces'. The Netherlands Ministry of Defence has one 'set of forces' for all tasks. The Netherlands is not unique in this respect; this practice is also evident in the armed forces of other countries.

(1) In the current situation, it is notable that there are no fully developed deployability targets for core task 1 (protecting national and Allied territory). This is strange because achieving the deployability for this target is nonetheless reported upon. In view of the increasing importance of core task 1 and the increased interwovenness of internal and external security, the working group is of the opinion that it is necessary to make the cascade 'from ambition to means' clear and transparent. This should be achieved by setting explicit SMART standards on the basis of the international and national security strategies and detailing these standards in the readiness matrices of the operational commands (i.e. amounts and types of units and the corresponding readiness levels).

(9) The system for standardising, measuring, certifying and reporting is currently neither uniform nor very consistent. Readiness reports are not fully unequivocal. Capabilities which are not fully ready according to the OR norm<sup>2</sup> are sometimes reported as ready for a specific task despite there being restrictions with regard to the OR norm. There is a lack of explicit knock-out criteria to determine whether a specific capability can in fact be reported as ready. The result of this is that the readiness process is insufficiently transparent and has insufficient value as a forecast of the expected readiness in the years to come. Notwithstanding the efforts of the Ministry of Defence to arrive at a readily comprehensible readiness process, this process as a whole should be made stronger. As a result,

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<sup>2</sup> The OR norm is the number of units of a capability that must be operationally ready in order to meet the deployability targets of the Ministry of Defence.

choices regarding readiness can be better substantiated and made more readily comprehensible for partners.

10) There is no clear insight into the impact of second- and third-order effects of deployment on the readiness process and the actual costs of deployment. Although the Article 100 letters do deal with the effects of a planned deployment on the readiness process, the impact of a deployment on the readiness process has proven to be greater than was estimated up until now. In addition, during the political decision-making process regarding deployment/extension of deployment, the actual impact on readiness was not entirely clear. As a result, the armed forces were deployed more often than could be accommodated for by the readiness process. As the armed forces stretch themselves to their limits in order to provide the requested deployment ('can do'), it is running itself dry on a structural basis.

(11) On the basis of the case studies, the working group determined that the actual additional costs of a deployment (including the second- and third-order effects) were larger than the projected expenditure and the additional costs for which the Ministry of Defence was reimbursed from the Netherlands international-security budget and the budget under the *Convenant Financiering Nationale Inzet Krijgsmacht*, the Netherlands covenant for financing the national deployment of the armed forces (FNIK). Due to the great diversity of units and the many interdependencies in the readiness process, it is currently not possible to calculate the actual costs of all deployments. The working group is of the opinion that further research into the actual costs of deployment is needed and that the actual additional costs of a deployment should be transparently taken into consideration in advance and should be reimbursed when the decision is taken to deploy.

(12) The decision-making process about a deployment and about the extension of deployment should preferably take place in a comprehensive and synchronised manner for all missions, taking into account all relevant aspects, including the actual costs of deployment and the impact of deployment on the readiness process. To this end it is necessary that all stakeholders have the same information at their disposal, so the Cabinet can make a comprehensive assessment.

(13) Research has shown that there is a clear link between deployment (both national and international) and the readiness process. As a result of the rapid pace of developments in the security situation, the interwovenness of national and international security issues and the link between activities of the Ministry of Defence and other ministries, permanent assessment and coordination is desirable between all involved ministries. Currently, there is no systematic form of consultation in place at administrative level under the Cabinet, such as via subcouncils, as there are for all other policy domains.<sup>3</sup>

(14) The readiness process can also be improved by the deployment of technology and innovation. The working group is of the opinion that further research is needed to determine what technology and innovations could best be deployed in order to strengthen the readiness process.

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<sup>3</sup> This is in line with: Clingendael *Strategische Monitor 2017* (February 2017), 25.

(15) With regard to the white paper *Houvast in een onzekere wereld*, in which the Ministry of Defence sketches a multi-year perspective for the armed forces, the working group is of the opinion that the proposed strengthening and renewal of the armed forces underlines the timeliness and importance of this inter-ministerial policy study with regard to sustainably ready and rapidly deployable armed forces.

(16) On the basis of the above, the working group comes to the conclusion that, with the current status and scope of the armed forces and the readiness process, the current ambition level is not feasible/not structurally feasible.

## **Recommendations of the working group**

The recommendations and intended effects of the recommendations are clustered into four categories: I Readiness process, II Inter-ministerial cooperation and coordination, III Investments, readiness costs and deployment costs, and IV Technology and innovation.

### **I Readiness process**

#### **(1) Set up the readiness process and task organisation on the basis of organic building blocks ('force elements').**

*Intended effect.* The working group looked in detail at the recent initiatives of the RNLA to further optimise the readiness process and output in terms of effectiveness and efficiency. In line with these initiatives, the working group proposes that continued efforts are made to strive towards making ready the (organic) building blocks of the 'toolbox' of the organisation ('force elements'). These 'force elements' can effectively, flexibly and quickly be fitted into larger national/international alliances, which are often needed for deployment. The operationally ready building blocks thus form the base for the units to be deployed, which are composed in accordance with the specific characteristics and circumstances of a mission, such as the task, terrain, weather and opponent. The working group realises that the building blocks of the RNLN, RNLA, RNLAf and RNLm differ according to type and nature. In general, the force elements of the RNLN and the RNLAf concentrate around large physical systems, such as vessels and aircraft. For the RNLA and the Marine Corps this is not the case and the force elements are concentrated around the functions of battalions and the constituent companies, with the number of force elements in the RNLA being generally higher because of the way the RNLA is structured.

#### **(2) Review the system for standardising, measuring and externally reporting on readiness and formulate the readiness process targets unequivocally and SMARTly.**

*Intended effect.* The standardisation, measurement, certification and reporting on operational readiness should be harmonised across the armed forces and made SMART, including by using the NATO capability codes and knock-out codes more stringently. In this way, the implicit considerations in the 'commander's professional judgement' can be made more explicit and comparable. This measure aims to increase the measurability and therefore the predictability of the readiness process. At the same time, decision-makers and legislators find the information difficult to read, partly due to the volume of information provided. It would be advisable to draw up a report that is customised for the House of Representatives and decision-makers that focuses, for example, only on the units that should meet the OR norm in that financial year and/or the capabilities that will be deployed.



**(3) Develop a ‘cost-to-readiness’ model that provides insight into the relationship between costs and readiness and involve the Ministry of Finance and the Ministry of Foreign Affairs in its development.**

*Intended effect.* A cost-to-readiness model should provide insight into the relationship between costs and readiness at the level of each capability. It can be used as a planning instrument to provide insight into the costs of (and desired improvement in) the readiness process and the costs of disruptions to readiness. A model such as this would provide an objective and comprehensible cost structure for readiness, which would also facilitate the political decision-making process. Setting up and coordinating an increasingly more detailed model based on historical data is expected to take at least three years.

**(4) Protect units that are operationally ready by ring-fencing them in order to prevent loss of readiness.**

*Intended effect.* With regard to readiness, ring-fencing means guaranteeing and maintaining operational striking power by protecting units. That is to say that during the deployment window they are protected from (major) personnel rotations or from giving up materiel or enablers. The conditions for this are that the units are staffed with qualified and trained personnel and that enough enablers remain available for qualification and training activities.

**(5) Invest in scale (numbers), standardisation (of types and configuration), and ‘commonality’ with international partners, and procure, as far as possible, on the basis of COTS-MOTS availability.**

*Intended effect.* Unique variants of weapon systems and other systems that are specifically configured for the Netherlands are expensive to procure and maintain. This also applies to vessel classes consisting of a single vessel, for example. More joint procurement of weapon systems can benefit the interoperability (through standardisation) and the effectiveness (economies of scale by sharing costs) in the long-term. It also forms a good foundation for operational cooperation in the user phase. Successful international cooperation such as for tanker aircraft (in which the Netherlands has a leading role) provides starting points that could also be used for other capabilities (e.g. helicopters). Procuring commercial or military ‘off-the-shelf’ materiel not only has the potential to bring down the price of procurement, it also helps to reduce maintenance prices, as it is easier to piggyback via market parties or in existing (international) maintenance contracts.

**(6) Allow crucial logistic and other processes key to the readiness process of capabilities to be subjected to a ‘peer review’ in order to bring about possible improvements.**

*Intended effect.* The case studies showed that improvements are possible that can have a significant positive impact on the readiness process. A general rule of thumb cannot be established for this; instead, processes should be investigated per capability. The working group suspects that there is profit to be gained here and advises the Ministry of Defence to invest this in an audit programme designed for this purpose. The high level of professionalism within the Ministry of Defence is precisely why it is suitable for this approach of dialogue between professionals.

## **II Inter-ministerial cooperation and coordination**

The working group is of the opinion that inter-ministerial cooperation and coordination should be strengthened in light of the observation that the impact of deployment on the readiness process is greater than has been estimated up until now and that, in light of the changing security situation, the armed forces should be both operationally ready and deployable. The working group also notes that a lot of inter-ministerial coordination currently takes place with regard to the deployment of the armed forces. The working group is of the opinion that it is necessary to safeguard the inter-ministerial cooperation and coordination in a cascade model that consists of the implementation of a multi-year vision process (recommendation 7), the composition of an annual readiness matrix (recommendation 8) and comprehensive decision-making process, for example in the event of a deployment (recommendation 9). In this way, the working group recommends a decision to deploy being linked to a multi-year vision by adopting a readiness matrix on an annual basis. The working group notes that the set-up of the existing form of consultation differs from the manner in which this is structured for other policy domains (often a ministerial committee or sub-council).

### **(7) Conduct a periodic (e.g. four-yearly) vision process in an inter-ministerial context with regard to the targets, nature and scope of the armed forces.**

*Intended effect.* On the basis of a national and international security analysis, the ministries (e.g. the Ministry of General Affairs, the Ministry of Defence, the Ministry of Foreign Affairs, the Ministry of Security and Justice and the Ministry of Finance) should discuss both the national and international consequences for the Netherlands. Together with the three core tasks of the Ministry of Defence and the political and financial reference points set out in the coalition agreement, this analysis should form the foundation for determining the deployability targets and the corresponding nature, scope and deployability of the armed forces (led by the Ministry of Defence). The result is that the armed forces are stable for a period of 4 to 5 years, on which the readiness process and corresponding standardisation can be based. Inspiration for this process can be taken from the British process for the 'Strategic Defence and Security Review' and the 'force generation' models that are used for this (for an explanation of this process, see paragraph 4.7).

### **(8) Produce a strategic 'readiness matrix' annually – as part of the budgetary cycle – in which is determined the amount and types of capabilities that will be made operationally ready by the Ministry of Defence and which are available for deployment.**

*Intended effect.* A strategic readiness matrix is an annual framework in which concrete targets are set for the readiness of units. Within this framework, and linked to the multi-year vision as sketched above, choices can be made with regard to investments in readiness of specific materiel, for specific missions, or for specific threats. A matrix of this kind provides insight for the various stakeholders – the Ministry of General Affairs, the Ministry of Foreign Affairs, the Ministry of the Interior and Kingdom Relations, the Ministry of Security and Justice and the Ministry of Finance – about the units that are in fact operationally ready, the capabilities that have already been allocated and the remaining 'discretionary margin' regarding operational capabilities that have not been allocated. Using a readiness matrix, readiness supply and demand can be brought together in a comprehensive manner and financing is brought into balance. It also prevents too high a demand on effects.

### **(9) Comprehensive decision-making**

*Intended effect.* The relevant ministries should be involved in decision-making that has a large impact on the readiness process, including deployment. This would be of greater significance if the inter-ministerial process was set up at ministerial level in a manner also being used in other major policy domains.

### **III Investments, readiness costs and deployment costs**

The counterpart to the cascade model described above is the manner in which the financing of the armed forces should be structured, i.e. in three parts: replacement and other investments, readiness costs and deployment costs. Although this distinction is already in place, there are no strict boundaries. There should be comprehensive decision-making on this matter. The working group calls for a separation of the means for investments, in order to prevent the investment programme being reduced to make ends meet with regard to the operational costs. In the past, arrears have arisen from materiel replacements and the implementation of necessary new programmes, with all the associated consequences for the readiness process. The means for the deployment of capabilities should be kept apart and should cover all additional costs of deployment, in so far as costs are not covered from a different source. The second-order and third-order effects that arise cut into the operational costs for readiness and therefore impair readiness. The working group recommends increasing the existing financial channels for funding deployment with a mark-up with regard to the current levels, in order to make it possible to fund deployment more comprehensively. More experience with and research into the extent of the second-order and third-order effects are necessary for this.

### **(10) Ensure stable multi-year financing for investment projects of the armed forces**

*Intended effect.* In view of the long-term nature of a number of major investments for the armed forces (such as materiel projects), the armed forces would benefit from stable multi-year financing. This could be made possible by making multi-year agreements at the political level regarding the development of expenditure on the armed forces (analogous with in Denmark and Sweden) – for investment projects in particular.

A second option would be to fund Ministry of Defence investments in a budgetary fund (such as the Delta fund). In this case, part of the budget would be allocated for timely investments in the replacement of capabilities. Finally, it is important that non-allocated ('available') investment funds are kept in place for investments in innovation and products with a short life cycle, such as IT.

### **(11) Strengthen the readiness process by investing in enablers and by replacing outdated materiel in good time.**

*Intended effect.* With regard to size and number, many enablers have fallen below a critical lower limit. As a result, the readiness process has been disproportionately disrupted. It is important that the term 'enablers' be clearly defined. This is possible by also identifying the key enablers, in the same way as a list is drawn up for the list of main weapon systems, as a reference point for investments in enablers. This is needed to enable the timely necessary replacement of outdated materiel for the current armed forces.

**(12) Identify the effects of extension decisions on the readiness process in good time**

*Intended effect:* It would be advisable to identify the effects of any extension on the readiness process straight away when taking the comprehensive decision to deploy, long before extension is actually an issue. It has, after all, proven to be the case that extending a deployment often comes at a higher price in terms of readiness and finances than the initial deployment. For the same reason, it would be advisable to synchronise decisions to extend deployment as far as possible.

**(13) Further investigate the funding of the deployment of the armed forces and record quantified costs in a 'deployment costs register'.**

*Intended effect.* The additional costs of a deployment of the armed forces are financed by the international-security budget for international deployment and the FNIK for national deployment. Three of the case studies revealed that second- and third-order effects of a deployment were often larger than estimated up until now, as a result of which the actual costs of these deployments were greater than the estimated additional costs. Currently, the consequence of this is that the Ministry of Defence finances the difference from its own budget and finances regular operational management. The working group advises further research into the funding of the deployment of the armed forces, including consideration of various options. Options in this regard are (a) a deployment fund, in which the costs of deployment are kept apart from the expenditure for the regular readiness process to a far greater extent and (b) the choice for a more comprehensive cost price for national deployments. With a view to establishing a well-informed decision-making process regarding deployment and to prevent deployment being paid for from the regular operational management of the Ministry of Defence, pricing needs to be further developed. By setting up a deployment costs register, known and quantified second- and third-order effects of a deployment (national or international) can be documented, with a view to building up a base of historical data. On the basis of this register, pricing can be developed further, which can be used to estimate the costs with regard to the additional costs of a deployment.

#### **IV Technology and innovation**

The working group concludes that the readiness process can also be improved by the deployment of technology and innovations. At the request of the working group, the Netherlands Organization for Applied Scientific Research (TNO) identified several technology and innovation options that have been developed far enough and are available and could therefore be used to strengthen the readiness process (this overview has been attached to this report as an appendix). For most of the innovations the greatest added value is created when they are implemented and applied across the armed forces.

**(14) Research whether technology and innovations can be better deployed to strengthen the readiness process.**

*Intended effects (illustrative and non-exhaustive)* Improved and continuous monitoring of systems ensures earlier detection of expected failure, which contributes to better mission planning, the reduction of maintenance costs and improved self-reliance of military units. 'Live virtual and constructive simulation' increases the flexibility and efficiency of exercises and makes exercising, training and mission preparation more realistic. It also increases the educational value. Role play in

particular has a high added value due to the possibility of creating a realistic social and cultural context. The introduction of individual monitoring systems (biometrics) improves the insight into the physiological and medical state of military personnel and thus contributes to better medical care, both during deployment and during the after-care phase. It also reduces the drop-out rate during qualification.

## Part 2: Study and findings

### 1 Aim and key terms

#### 1.1 Aim and scope of the study

The Minister of Defence reported problems with the readiness process, including in the Ministry of Defence 2015 annual report, which reported that the basic readiness of multiple units across all four operational commands was poor. Units were trained to conduct the planned missions, but not to conduct all possible missions across the full spectrum of force. The Minister stated in the report that this, in combination with the higher expectations of NATO, had led her to conclude in the second half of 2015 that the Ministry of Defence did not fully meet the deployability target of protecting national and Allied territory, reporting that the stricter NATO readiness requirements put an extra burden on the armed forces, which may have consequences for the other deployability targets.<sup>4</sup> This report was published two years after the Ministry of Defence white paper '*In het belang van Nederland*' (translated into English as 'In the interest of the Netherlands') had presented sustainably ready and deployable armed forces by reducing the level of ambition.

The Netherlands Court of Audit also stated in its report accompanying the 2015 annual report that the deployability of the Netherlands armed forces had reduced over the past few years and that as the Ministry of Defence continued to make unrealistic demands of itself, the organisation was being run dry. It reported that there was too little materiel available and that increasingly more units could not fully complete the necessary training and instruction programmes, concluding that this was a concerning situation, certainly as the international security situation had worsened.<sup>5</sup>

For the next few years, the Netherlands government has allocated a phased increase of the Ministry of Defence budget by €870 million. Of this, €500 million is allocated to a phased increase up to 2020, in order to bring readiness up to the norm by 2021. Unexpectedly for some policy-makers, the limited readiness and sustainability played a major role with regard to the commencement and extension of a variety of missions over the last few years.

The problems identified with readiness and deployability at this stage were the motivation for this inter-ministerial policy study on the readiness of the armed forces. The readiness process of the armed forces is the scope of this study. It sets out the expenditure breakdown related to the readiness process and what the options are for organising this process as effectively and efficiently as possible. As part of this, the study considers the readiness process needed for units to become operationally ready and the impact of deployment on readiness.

The study provides answers to the following remit questions in particular. The full remit is attached as an appendix.

- What is the scope and definition of the term 'operational readiness'?

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<sup>4</sup> Netherlands parliamentary paper II 2015/16, 34 475 X, no. 1, *Jaarverslag Defensie 2015*, p. 137.

<sup>5</sup> Netherlands Court of Audit, *Resultaten verantwoordingsonderzoek 2015 bij het Ministerie van Defensie* (18 May 2016), p. 4.

- Which mechanisms (interdependencies) impact on the operational readiness process and which levers are used, or could be used, with a view to improving the effectiveness and efficiency of the process?
- What is the expenditure breakdown of the readiness process and what are the corresponding norms for the readiness process and deployability targets?
- Within the same budget, what options are there to improve the efficiency and effectiveness and the balance between targets and means?
- What is the relationship between the current deployability targets and the operational readiness?
- How has the realisation of the operational readiness developed over the past five years?

The working group employed McKinsey & Company in order to arrive at answers to these questions. Using in-depth case studies of four capabilities (the landing platform dock, the C-130 transport aircraft, an airmobile infantry battalion and a mechanised infantry battalion), McKinsey & Company further tested a number of questions from the remit in practice. These four cases are representative with regard to the processes, tasks, capacities, problems and challenges of the Netherlands armed forces.

The working group endeavoured to compare readiness processes in other countries and to involve in the study other countries with units comparable to those in the case studies (e.g. Germany, France, the United Kingdom, Denmark, Norway and Spain). Unfortunately, it was not possible to conduct a detailed international comparison between the comparable units in the short time available. The working group paid visits to the United Kingdom to learn about the multi-year defence agreements, readiness models and financial models there and the experiences with them. It became evident that the Netherlands and the United Kingdom were experiencing many of the same elements of the problems related to the readiness process. Nonetheless, valuable points of reference and sources of inspiration were found. The working group recommends further extending the work on an international benchmark.

For a proper understanding of the readiness process, it is important to better explain and, in particular, make clear the differences between a number of key terms.

## 1.2 Key terms

The armed forces are divided into the elements of the Ministry of Defence, including four operational commands (the Royal Netherlands Navy, the Royal Netherlands Army, the Royal Netherlands Air Force and the Royal Netherlands Marechaussee). These operational commands are made up of **units** and have (main) **weapon systems**. Units form the building blocks from which an operational command is built. Army units can be distinguished according to size, increasing in size as follows: group/platoon/company/battalion/brigade. Sometimes a unit is formed around a weapon system, such as a Patriot unit. These are known as manned weapon systems, in contrast to an equipped man (e.g. an infantry soldier). Units and weapon systems are called **capabilities**.

A distinction is made between **combat units (C)**, **combat support units (CS)**, and **combat service support units (CSS)**.<sup>6</sup> Combat support units are units that provide operational support to combat units, in the form of fire support, for example. The tasks of the combat service support units include providing logistic support to combat units and combat support units.

The task profile for which a unit is structured and set-up is determined by the **organic task**. That is the range of tasks for which the unit will primarily be made ready.

The unit's task profile is laid out in 'capability statements' (a unit must be capable of performing tasks specified in more detail). Capability statements are part of a 'capability code', which is the specific description of a task that a unit must be able to conduct. Capability codes usually originate from NATO. In cases for which there are no NATO capability codes or for which they are insufficient, Dutch capability codes are drawn up.

#### **NATO capability code example: for an attack rotary wing (Apache AH-64)**

##### *Capstone capability statement*

1.1 Capable of acquiring and engaging stationary or moving hard targets, day and night, at a minimum range of 3,000 metres.

##### *Principal Capability Statements*

2.1 Capable of minimum cruise speed of 120 Knots/h, duration of 2.5 hours (at least 1 hr on station) and combat radius of 150 km at 85% of maximum mission gross weight.

2.2 Capable of using onboard sensors to locate, identify and designate targets, in all weather conditions, day and night, for engagement by other weapon platforms.

2.3 Capable of recording the post-attack target damage inflicted on its intended target with an all-weather day and night recording system.

2.4 Capable of recording and disseminating imagery in the form of stills or video (by day, night and in very limited visibility conditions), to a designated processing / exploitation / fusion centre in a timely, robust and secure manner.

2.5 Capable of automatically updating Log/Ops chain of command regarding ammunition, fuel consumption and manpower, as well as combat and non-combat related major damages.

Source: NATO, Agreed capability codes and capability statements (2011).

The **readiness process** is the process of making processes or capabilities (units and weapon systems) of the armed forces **operationally ready (OR)**. If a unit is operationally ready, the unit is capable of conducting organic tasks and assignments. Operationally ready and **organically ready** are synonyms. Before a unit is deployed for an operation, a mission-specific training and exercise programme must usually be completed, with a focus on the specific assignment and the mission conditions.

**Readiness categories** describe the various readiness levels and have specific time intervals that indicate the number of days in which a unit must be ready. These range from R1, which means the unit must be deployable within 2 days, to R9, which means the unit must be deployable within 180 days. A high level of readiness means that not only the unit itself is deployment-ready, but also all logistic support (vehicles and supplies).

On the basis of the white paper 'In the interest of the Netherlands', the three core tasks of the armed forces were translated into **deployment targets**. The military presence in the Caribbean territories of the Kingdom is identified as a fourth independent deployment target (alongside the three core

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<sup>6</sup> See the appendix 'Number of capabilities (organic capabilities) in 2015'.



tasks). For the four deployment targets, **deployability targets** were then set. These provide a general overview of the capabilities that the armed forces make operationally ready in order to meet the deployment targets.

**The armed forces have three core tasks:<sup>7</sup>**

1. Protecting national and Allied territory, including the Caribbean parts of the Kingdom of the Netherlands.
2. Promoting stability and the international rule of law.
3. Supporting civil authorities in law enforcement, disaster relief and humanitarian aid, both nationally and internationally.

**The four deployment targets and the associated deployability targets.<sup>8</sup>**

As of 2014, the armed forces are deployable for:

1. The protection – and if necessary the defence – of national and Allied territory, including the Caribbean parts of the Kingdom, with all available means as required; This task is performed in alliance with NATO partners. In this framework, NATO may also call upon the Netherlands for assistance.
2. Participation in worldwide operations to promote international stability and rule of law, to render assistance in the event of natural disasters and humanitarian crises, and to protect the interests of the Kingdom. These operations are generally conducted in an international context, which involves the contributions of the various partners being integrated into composite units. Within this framework, the armed forces can make the following contributions:
  - On land: A brigade-sized composite task force for one-off deployment, or battalion-sized composite task force for long-term deployment. In addition to long-term deployment of a battalion-sized task force, a second battalion-sized task force can be deployed for a shorter period of time plus various smaller contributions for longer periods of time, including military presence in the Dutch Caribbean.
  - At sea: A maritime task force of five vessels for one-off deployment, or two vessels for separate long-term deployments, involving integrated operations of the fleet and marines.
  - In the air: Until the replacement of the F-16 (planned for 2023), a group of eight fighter aircraft for a one-off deployment operation, or a group of four fighter aircraft for long-term deployment. After the replacement of the F-16 (planned for 2023), one-off or long-term deployments of a group of four fighter aircraft. Helicopters support operations on land and at sea.
  - Special operations: Long-term company-sized contribution to a joint special forces task force.
  - Cyber operations: defensive and offensive cyber tasks and intelligence-gathering.
  - Niche capabilities (along with special forces and offensive cyber capability): submarines, the German-Dutch Corps headquarters, air transport, air-to-air refuelling, Patriots, and the Civil-Military Interaction Command.

All these types of deployment include supporting units, both combat support and combat service support. International partners can be called upon for combat service support in particular. Vice versa, our armed forces can also provide support to our international partners. Another option is the deployment of separate modules of supporting capabilities.

3. Contributing to national security under civil authority. The armed forces make contributions in this area in accordance with statutory and inter-ministerial agreements. This involves the following:
  - Carrying out structural national tasks, such as policing duties by the Royal Netherlands Marechaussee, ensuring the security of Dutch airspace by means of fighter aircraft, the coordination of and assistance rendered to the Netherlands Coastguard, as well as hydrographical tasks;
  - The ability to take action against cyber threats and cyber attacks in cooperation with security partners (cyber capability);
  - Military aid and support in upholding the rule of law, maintaining public order and security, particularly by means of the capabilities guaranteed in the Intensification of Civil-Military Cooperation catalogue;

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<sup>7</sup> Article 97, paragraph 1, of the Constitution of the Kingdom of the Netherlands: There shall be armed forces for the defence and protection of the interests of the Kingdom, and in order to maintain and promote the international legal order.

<sup>8</sup> Netherlands parliamentary paper II 2013/14 33 763, no. 1. Appendix: White paper *In het belang van Nederland*, p. 26.

- Military aid in combating terrorism, natural disasters and humanitarian crises, with all available units if so required.

4. A permanent military presence in the Dutch Caribbean, both for defence purposes (see target 1) and to support the local and regional civil authorities (see target 3, particularly services in support of the coastguard, regional counter-drug operations, policing duties of the Royal Netherlands Marechaussee and suppression of unrest). The permanent presence consists of two rotating companies of either the Royal Netherlands Navy or the Royal Netherlands Army, a boat platoon, a large surface vessel, a support vessel and a Royal Netherlands Marechaussee brigade. If the situation so requires, the military presence in the Dutch Caribbean can be increased. This would, however, be at the expense of the other deployment options.

In the **Chief of Defence's Instructions for Operational Readiness** (*Aanschrijving Gereedstelling Commandant Der Strijdkrachten* (AGCDS) in Dutch), which are NL restricted, the Netherlands Chief of Defence (CHOD) annually gives orders to the operational commands, the Support Command and the Defence Materiel Organisation to make their units ready.

The total number of operationally ready units that are needed to meet the deployability targets from the Ministry of Defence white paper is the **baseline**. In the CHOD Instructions for Operational Readiness, the term **OR norm** is used (*Norm OG* in Dutch).

The Chief of Defence orders may differ from the OR norm/baseline, for example as a result of maintenance delays. The annual output that can be realistically expected of a capability is the **expected OR**, which is always stated with the relevant year.<sup>9</sup> The expected OR for each capability is then incorporated in the **targets matrix**, which is drawn up by the operational command and included in the annual defence budget.

The targets matrix also includes the total number of capabilities listed that are available (broken down into 'building blocks/modules for joint units'), what the OR norm is and, where relevant, the year in which the OR norm is expected to be reached. In the Ministry of Defence annual report, the capabilities that were OR (or OR with limitations) in the relevant year are then reported; this is the **'realised OR'**.

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<sup>9</sup> The term expected OR was introduced to the 2016 budget as a response to the Netherlands parliamentary paper II 2014/15, 34 200 X, no. 12, *Motie van de leden Eijssink en Teeven over aanvullende middelen om ambities waar te maken*.

### Example: RNLAf targets matrix 2017-2021 (2017 budget)

DOELSTELLINGENMATRIX CLSK 2017 – 2021					
Capaciteit	Bouwsteen / module voor SE	Totaal aantal	Norm- OG	OG 2017	Verwachting behalen Norm-OG
Jachtvliegtuigen	F-16	61	11	6→11*	2018
Helikopters	AH-64 Apache	28	10	4*	2019
	CH-47 Chinook	17→20	6→8	3*	2019
	AS-532 Cougar	8→12	3→5	3*	2019
	NH-90	20	2→8	2*	NBP
Transport-vliegtuigen	KDC-10	2	1	1	2017
	C-130 Hercules	4	2	2	2017
Kustwacht NLD	Dornier DO-228	2	1	1	2017
Force Protection	OGRV eenheden	4	2	2	2017
Air C4ISR	Luchtverkeersleiding	1	1	1	2017
	Luchtgevechtsleiding	1	1	1	2017
	NDMC	1	1	1	2017

1. De capaciteiten vermeld in kolom «OG 2017», waarbij in de laatste kolom het jaartal 2017 is vermeld, zijn naar verwachting in 2017 zonder beperkingen inzetbaar.

2. De bouwstenen/modules gemarkeerd met \* kennen naast een kwantitatieve ook een kwalitatieve beperking t.o.v. Norm OG in 2017. Voor de capaciteiten waarbij een ander jaartal in de laatste kolom wordt vermeld, geldt dat deze naar verwachting in 2017 inzetbaar zijn maar dat er daarbij beperkingen gelden.

3. De voorlopige prognose is dat de beperkingen van deze capaciteiten zijn opgelost in het jaar dat in de laatste kolom wordt vermeld. Dit is mede afhankelijk van inzet van eenheden, voldoende en adequate ondersteuning (CS/CSS) en ontwikkelingen op de arbeidsmarkt.

4. De afkorting NBP in de kolom «Verwachting behalen Norm-OG» staat voor «na begrotingsperiode».

In the **usability matrix**, the deployability targets are linked to the minimum number of capabilities needed to meet them. These capabilities must be (organically) ready throughout the year. The operational readiness of a capability can have the following values:

1. OR = ready for all organic tasks;
2. OR with limitations = ready, but not for all organic tasks;<sup>10</sup>
3. 'Not OR' = a capability that has too many limitations to be ready.

In order to sustainably realise the deployability targets, sustainability is also required alongside the numbers for the OR norm. The sustainability consists of the units that are not yet OR. While part of the total capability is OR, part is training for mission relief, training for organic tasks or conducting maintenance and recuperation. All units that can be organically ready within 180 days are part of the sustainability.

Readiness, exercises and actual deployment are all 'activities', which are expressed in **sailing days**, **person exercise days** and **flight hours**. Per day or hour, a **norm amount** or **planning rate** is linked to these. The planning rate is made up of elements for which costs are involved, such as allowances, fuel, ammunition, etc. Once a year, the planning norms and planning rates are adjusted on the basis of actual figures and incorporated in the norm systems for the following policy, planning and budget cycle.

<sup>10</sup> Up until 2013, the term 'specifically ready' was also used for this concept, as stated in the 2012 budget (translated here from the Dutch): "When it is known in advance what a unit is to be deployed for, it is not efficient to prepare for the whole organic task. In that case it is meaningful to prepare the unit specifically for that part of the organic task that is required for the mission; this is specific operational readiness. Units can also be specifically operationally ready because a particular part of the organic task cannot temporarily be conducted due to a lack of personnel, materiel or the opportunity to exercise."

A standardised amount of activities is attached to each readiness and deployment order. This amount, the **planning norm**, quantifies the amount of instruction and training that is needed on average in order to fulfil the readiness order. The norm for making an F-16 aircraft ready, for example, is 180 flight hours per year. The description of the types of exercises that must be completed according to the planning norm in order to be operationally ready is included in the **norm exercise package**.

### 1.3 The readiness process

In order to arrive at units that are fully operationally ready and that can be deployed for the targets set by the government, a link is needed between these targets and the readiness cycle. Ideally, there is a 'cascade' from the policy-related description of the targets in the International Security Strategy (ISS) that flows down to operational instructions. The ISS is drawn up at the start of the government's term of office by the Minister of Foreign Affairs. Sometimes it is reviewed during the term of office (for example at the end of 2014, following the developments relating to Crimea and MH17). Together with the ISS, the government develops a vision of the armed forces, which is written up in a Ministry of Defence white paper. The most recent Ministry of Defence white paper '*In het Belang van Nederland*' (translated into English as 'In the interest of the Netherlands') is dated November 2013.

In a Ministry of Defence white paper, the government describes the level of ambition that is needed to meet the targets set; this is primarily achieved by formulating deployment targets. These deployment targets are in line with the constitutional core tasks of the Ministry of Defence and relate back to the ISS. For each core task it must be determined which capabilities and units must be available in order for the deployment targets to be met (deployability targets). The operational description for the armed forces is determined annually in the CHOD's Instructions for Operational Readiness and includes norms for the capabilities and units, and orders for the operational commands. These norms are as concrete as possible, for example two of the seven manoeuvre battalions made fully ready annually. Exactly how many units and capabilities can be made fully ready annually is determined by the publication of a Ministry of Defence white paper, as well as a forecast of the status of the armed forces by the armed forces themselves. As described in the readiness process below, this is a continuous process; the impact of the ISS and the Ministry of Defence white paper can therefore be seen as guiding the process. After all, the schedule for realising the readiness process runs parallel to the Ministry of Defence budgetary process. In the year T-1, the financial means that are needed to realise operational readiness are determined by adopting the CHOD's Instructions for Operational Readiness. This is fed into the budgetary tables of the draft budget that is published on the third Tuesday of September in the year T-1.

The readiness process itself consists of three components or sub-processes that are closely related: a personal component, (**personal readiness; PR**), a materiel component (**materiel readiness; MR**) and a skill component (**preparedness**).

The Chief of Defence, and the Directorate of Operational Readiness of the Ministry of Defence Staff on his behalf, is responsible for directing the readiness process of organic units and for determining the OR norm. The Director of Operations (DOPS) of the Ministry of Defence Staff is responsible on behalf of the CHOD for directing deployment readiness and for the actual deployment of troops. The commanders of the operational commands (OPCOs) are responsible for the structure and

implementation of the readiness process within their OPCO and the mission-specific training in order for a unit to move from operationally ready to deployment-ready. The readiness process is structured differently at each OPCO, because of the specific characteristics and properties of the units and the operational domain in which they must operate, as well as the weapon systems that are used. Each OPCO therefore also has its own reporting system. Adapting these reports for the universal armed-forces reporting system is a very time-consuming process for the OPCOs.

To illustrate this, the readiness process is explained step-by-step below.

In spring of the year T-1, the OPCOs forecast the units to be made ready in the year T. The forecast sets out the extent to which the readiness that year will deviate from the OR norm. Deviations may arise because maintenance of a vessel is taking longer than planned, for example.

In November of the year T-1, the CHOD gives orders to the OPCOs to make the units fully ready in the year T. The readiness matrices are released in the CHOD's Instructions for Operational Readiness, with a separate readiness matrix for each OPCO, including the types and amounts of units that must be made ready, and the corresponding readiness period. Simultaneously, Parliament is informed in the budget for year T about the readiness orders given to the OPCOs.

In the year T, the OPCOs make the units ready in accordance with the readiness orders. In order to achieve this, the commander plans out the activities needed in order to make the units ready on time.

To this end readiness is often split up into three closely related sub-processes. First of all, personnel readiness. This involves instructing, appointing, training and taking care of the personnel posted to operational units. In order to achieve the norm for personnel readiness, there must be, for example, sufficient numbers of personnel in the unit (staffing), and they must be in good health and have had the correct training to be able to complete their tasks.

Secondly, he draws up a programme for materiel readiness, which involves the composition (e.g. the integration of vessels and weapons) and the maintenance plan for materiel. It is important that sufficient materiel is available and deployable, because otherwise the training either cannot go ahead or must be amended. The unit is not always the owner of the equipment and materiel allocated to that unit. Following cost-cutting and efficiency measures, a lot of materiel has been pooled centrally (e.g. logistics, fire support, trucks and helicopters).

Thirdly, the commander draws up an exercise schedule for the preparedness of the unit. This is the process during which the units train and complete exercises. At this stage, the commander uses the personnel and materiel of his unit to practice the organic skills. There are several levels of organic readiness, from the individual serviceman/woman up to the unit level. The management report is compiled at the highest level, i.e. battalions for the army, vessels for the navy and aircraft and helicopters for the air force.

In order to be able to conduct successful exercises, the commander needs support from combat support units and combat service support units, which are known as the 'enablers'. These capabilities are an integral part of the readiness. Enablers are in short supply, are for the most part organised centrally and are not always available. They are in short supply because the means needed for deployment cannot be ready simultaneously. As a result, the readiness process may be delayed or

even stopped prematurely. Usually, the unit completes its organic readiness process with a certification exercise. Once these three sub-processes have been successfully completed, the unit is **organically ready**. The readiness process may be disrupted or delayed if the unit is deployed for other tasks such as military ceremonial duties or a crisis management exercise.

Once a unit is organically ready, it enters the 'deployability window' (varying from 9 months and more for RNLA, to a maximum of 18 months for RNLN). In order to continue deployment for a longer period, a four-stroke operational cycle must be implemented. This cycle is based on the assumption that for each unit that is deployed, three are needed to continue the deployment. While the first unit works on preparing and training for a deployment, the second unit is deployed, the third unit has a period of recovery, recuperation and maintenance following deployment, and the fourth unit trains for organic tasks (insofar as these were not trained before deployment).<sup>11</sup> The units that are not organically ready at that time form the sustainability. This cycle means that one unit of the same type is always organically ready. Each quarter, the OPCOs report to the Ministry of Defence Staff on how readiness is progressing. The Ministry of Defence reports to Parliament on the realised readiness in the annual report of year T.

When a unit is allocated for deployment (e.g. a mission), the deployment-readiness process starts. The optimum mix of capabilities for the mission is determined by the specific deployment, the orders and the conditions of the mission. It goes without saying that these differ according to the mission. Missions are therefore normally conducted by joint units. In this way, the various sub-units and disciplines are brought together in order to be able to complete the assignment of the mission as well as possible. This requires a specific training programme. The unit sometimes has to train in a composition that is new in part and may have to learn to deal with materiel especially procured for the mission, learn to operate in the terrain and weather conditions of the deployment area, and prepare for the specific opponent and the culture of the local population. Once this programme has been completed, the unit is **deployment ready**.

A mission abroad usually lasts between four and six months. While the unit is deployed, another unit from the sustainability completes a similar training programme in order to be able to relieve the deployed unit. Following deployment, a period of recovery and recuperation follows for the unit that was deployed.

Although the OPCOs are responsible for the sub-processes 'personnel readiness' and 'materiel readiness', this is not the case for the recruitment of personnel or the procurement of materiel, for which other Ministry of Defence elements are responsible. The Support Command and the Defence Materiel Organisation are responsible for the recruitment of personnel and the procurement of materiel, respectively.

### **Building blocks for readiness**

The readiness system of the armed forces is based on the building-block principle (like Lego bricks). As the nature, type and organisation of capabilities of the operational commands vary, each armed force has its own building blocks. Examples are: companies and battalions in the RNLA and the

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<sup>11</sup> Sometimes a three-stroke operational cycle is spoken of, consisting of deployment readiness, deployment and recuperation. In practice, for example, the army brigades do not consist of four identical battalions.

Marine Corps, helicopters and aircraft in the RNLA and ships and boats in the RNLN. The building blocks follow a readiness system (of training and instruction), which leads to certification and operational readiness per building block. The levels higher in the hierarchy than these individual building blocks are needed to synchronise and realise the operational effects of the building blocks during deployment. We call this 'Command and Control'. These joint units at higher hierarchical levels are subsequently certified. This is an internationally recognised and approved system.

The building blocks fit seamlessly into larger national/international alliances which may be needed for deployment. For example, the 'company' building block of the RNLA can operate independently in a national/international alliance. In that case, additional combat support and combat service support must be allocated to this unit. In order to prevent fragmentation, it is wise to cluster certain capabilities at a higher organisational level. If such a unit is inserted in a larger national/international alliance (battalion level), consideration is first taken of the extent to which the necessary combat support and combat service support from the larger alliance can be allocated temporarily and locally to support the company. Only then is consideration taken of what national support the unit still needs. In this example, the battalion level is the unit size that is needed to achieve the deployability targets.

For deployment on a mission, the assignment and circumstances of the specific mission determine what the most effective composition of a unit is (i.e. which building blocks are needed). This varies for each mission, so units cannot be composed in advance (e.g. during non-deployment). After all, deployment in Mali demands a different unit than deployment in Afghanistan. The assignment, effects to be achieved, terrain, weather and opponent, as well as the coalition partner capabilities that may or not be present determine the most effective composition of the unit to be deployed. The various modules (operationally ready building blocks) are tuned to the mission. Subsequently, this unit completes an instruction and training programme in preparation of the specific upcoming mission. This period of additional specific training of operationally ready units is called the deployment readiness period (DR period). The commander of the operational command who is responsible for the readiness process validates and certifies the unit as ready for the mission. Subsequently, he hands over the unit to the CHOD, who deploys the unit and directs it during the mission from the national perspective, and checks whether the unit is operating within the mandate given by the Netherlands. The national/international operational commander of the mission directs the unit on site and gives orders to the unit.

#### **1.4 The deployment of the armed forces**

Regular deployment of the armed forces takes place in the context of international deployment for deployability target 2 and national deployment for deployability target 3.

##### **International deployment**

The deployment of the armed forces is conducted on the basis of the principles and starting points established in the International Security Strategy (ISS). The government established the ISS *Veilige wereld, veilig Nederland* in 2013. It is based on three interests of the Netherlands: national and Allied territory, well-functioning international rule of law, and economic security for the Netherlands.

Following the annexation of Crimea by Russia and the quick advance of ISIS in Iraq and Syria, there was a need for an update to *Veilige wereld, Veilig Nederland* a year and a half later.<sup>12</sup> The policy paper *Turbulente Tijden in een Instabiele Omgeving* should be seen as an analysis of the main lines set out in the ISS, requested by the House of Representatives, which is needed to establish the level of ambition of the armed forces for the coming years.<sup>13</sup> In the policy paper, the government sketches a world to which thinking in terms of spheres of influence and power politics has returned and in which security and economics are intertwined. The government is strongly committed to a security strategy with a geographical focus on the ring of instability around Europe. The nature of conflict is changing: the dividing line between state and non-state actors is fluid and the arsenal of instruments in conflicts is diverse. Energy security, technology and communication, not to mention the cyber domain, play a major role in this regard.<sup>14</sup>

Dutch participation in international crisis management and peace operations is discussed by the Steering Group Missions and Operations (SMO). The SMO is a high-level advisory body that advises the responsible ministers on all Dutch contributions to military, civilian and integrated missions and operations. The SMO consists of the senior civil servants of the Ministry of Foreign Affairs, the Ministry of Foreign Trade and Development, the Ministry of Defence (including the CHOD), the Ministry of Security and Justice and the Ministry of General Affairs. The SMO meets on a weekly basis. The Ministry of Finance is not informed about the decisions made until later. The political decision-making process runs through specific meetings of government members organised for this purpose and not via the system of subcouncils and ministerial committees. The considerations for the decision-making process (including the consequences of deployment for the sustainability and readiness of the armed forces) are discussed in the Cabinet by means of an Article 100 letter and communicated to Parliament.

The Netherlands has a responsibility towards a variety of international organisations, such as the United Nations, NATO and the European Union. Since the 1990s, units for different tasks have been offered to different organisations. ‘Double hatting’ is the term usually used to refer to units that play two roles. Examples of the double hatting of units is the classification of a unit as an international stand-by force or readiness force as well as the deployment of the same unit for a nationally mandated operation. The UN, NATO and, more recently, the EU have a variety of stand-by or readiness forces, to which countries commit to delivering units within a period agreed in advance in the event of a major disaster or political crisis, following national decision-making. An example of a standby force is the SHIRBRIG (the Stand-by High Readiness Brigade) that can be deployed by the UN for peacekeeping operations within 30 days. Examples of readiness forces are the NATO Response Force and the EU Battlegroups.

The challenge with double or even triple hatting is that this does not make a ‘single set of forces’ into a ‘multiple set of forces’. The armed forces have only a single ‘set of forces’ for all tasks, and the double hatting of units suggests that the armed forces have more units at their disposal than is

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<sup>12</sup> Netherlands parliamentary paper II 2012/13, 33 694 no. 6. Netherlands policy paper *Internationale Veiligheid: Turbulente Tijden in een Instabiele Omgeving* (21 June 2013); Netherlands parliamentary paper II 2015/16 33 694, no. 9. Letter to the Netherlands government *Samenhang Nederlandse inspanningen in missies* (9 September 2016).

<sup>13</sup> Netherlands parliamentary paper II 2014/15 34 000, no. 23. Motion by Netherlands MP Van der Staaij et al *Het noodzakelijke ambitieniveau van onze krijgsmacht in de komende jaren* (18 September 2014).

<sup>14</sup> Netherlands parliamentary paper II 2012/13, 33 694 no. 6.



actually the case. In view of the worsening security situation, the double hatting of units must be more carefully considered by NATO. In view of this, double hatting is increasingly less accepted under the higher NATO readiness requirements that demand logistically independent units with their own supplies and munition.

### **National deployment**

Under the third core task, the Ministry of Defence supports civilian authorities nationally. This core task was added to the Ministry of Defence white paper of 2000. The importance of the third core task increased following the attacks of 11 September 2001. Partly due to the increase in the international deployment of the armed forces, guarantees were also laid down in the Netherlands covenant of administrative agreements made under the intensification of civil-military cooperation ‘*Convenant bestuursafspraken inzake Intensivering Civiel Militaire Samenwerking*’ (ICMS) in 2007, regarding the availability of armed force capabilities for military aid and support throughout the Kingdom. It stated that the Ministry of Defence had to evolve from being a last resort to become a permanent security partner for the police, the fire services, the municipal authorities and the medical services in the event of incidents and disasters.<sup>15</sup> The armed forces estimate that over a quarter to a third of the military capacity is made available to support civilian authorities in the Kingdom.<sup>16</sup> The Ministry of Defence organisation guarantees certain capabilities for military aid<sup>17</sup> and military support<sup>18</sup>. In the ICMS catalogue, the Ministry of Defence unilaterally guarantees the availability of the capabilities that are needed to provide this aid and support, specifying the capabilities, amounts and notice to move. Over the past few years, the guarantees laid down in the ICMS catalogue have been intensified.<sup>19</sup>

For some national deployment tasks there is a regular readiness process. This applies to the national tasks conducted by the Ministry of Defence independently, such as securing Dutch air space, contributions to the Dutch coastguard, the tasks of the Royal Netherlands Marechaussee, and specialist tasks for which civil expertise is largely lacking, such as the detection and clearance of explosive ordnance. No units or materiel need to be made ready for military aid. The requested support is provided by the permanent organisation. Deployment of this kind does have a disruptive effect on the instruction and training cycle. The deployment is often, however, short-term.

### **1.5 Matching ‘supply’ and ‘demand’ of ready units**

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<sup>15</sup> Netherlands parliamentary paper II 2013/14, 33 763 no. 39. Letter to the Netherlands government *Eindmeting ICMS 2013*’ (14 April 2014).

<sup>16</sup> *Catalogus nationale operaties*, release 2016/2, p. 1; Netherlands Ministry of Defence, *Evaluatie inzet Nederlandse militairen 2014. Verantwoording van Nederlandse militaire bijdragen aan operaties, missies en samenwerkingsprogramma’s* (15 May 2015).

<sup>17</sup> Aid provided by the Ministry of Defence to an administrative authority pursuant to Sections 57, 58 and 59 of *Politiewet 2012* (Netherlands police act 2012) or Section 51 of *Wet Veiligheidsregio’s* (Netherlands security regions act) and/or Section 6 to 9 of *Veiligheidswet BES* (BES islands security act) or the CHOD’s Instructions for Operational Readiness with regard to deployment of the armed forces in Aruba, Curaçao and Sint Maarten.

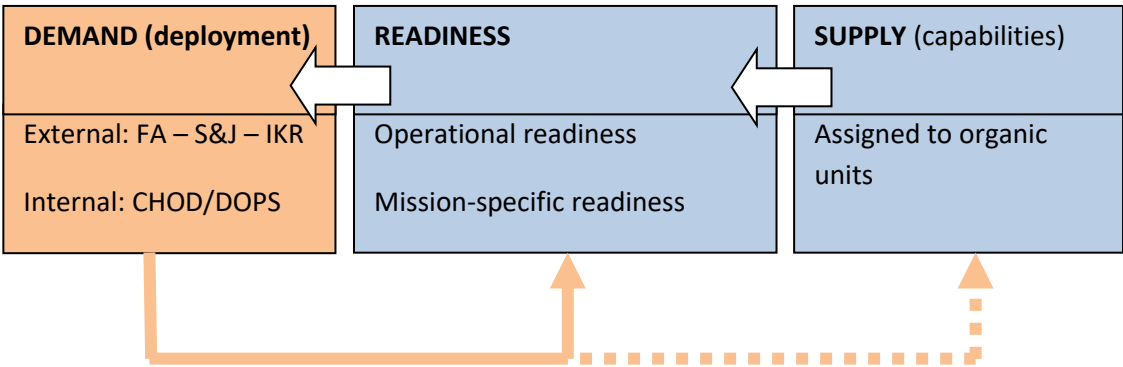
<sup>18</sup> Military support: Support provided by the Ministry of Defence to an administrative authority in situations relating to the public interest, which is not military aid.

<sup>19</sup> Compare *Catalogus nationale operaties 2016/2*, p. 234, to Netherlands parliamentary paper II 2015/16, 34 475 X, nr. 1. *Jaarverslag Defensie 2015*, p. 34.

The figure below depicts the main features of the supply and demand process of deployment and readiness. Under demand we see the ‘main users’ of the Ministry of Defence: the Ministry of Foreign Affairs (FA) for deployment in international alliances, and the Ministry of Security and Justice (S&J) and the Ministry of the Interior and Kingdom Relations (IKR) for the deployment of the armed forces in national alliances. The CHOD himself (as the Director of Operations (DOPS)) is also listed under demand because he is responsible for the deployment of the armed forces. Under supply we see the available capabilities (units and weapon systems) of the armed forces, which must be subsequently made ready.

The figure runs from supply via readiness to demand. There are two types of feedback from demand. Firstly, short-cycle feedback: the types of units that must be made ready, for example in the case of decisions regarding extension or the sustainability. Secondly, long-cycle feedback: the supply/nature of the supply (i.e. the amount and types of capabilities) that must be in line with demand or, in other words, in line with the (current or changing) security situation.

**Figure: Matching ‘supply’ and ‘demand’ of ready units**

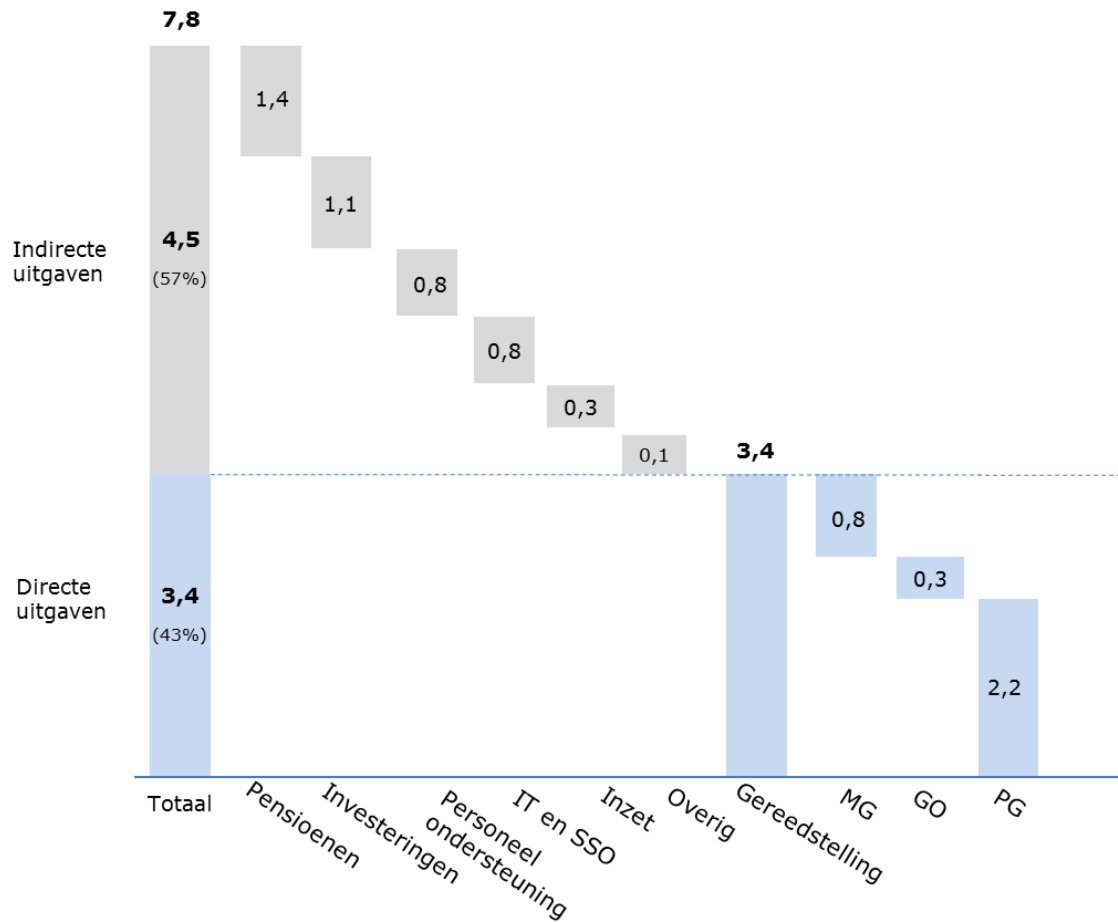


Market forces do not play a role in matching supply and demand. To effectively match supply and demand, all players must have insight into the availability of ready units. It is therefore important that the supply and the demand processes are both disciplined and function on the basis of agreements. On this basis, the government (limited by the level of ambition financed) can effectively fulfil its tasks and responsibility both internationally and nationally to protect the Netherlands and deliver a relevant contribution to international alliances in the form of high-quality units.

**1.6 Financing readiness and deployment**

Direct expenditure for readiness can be broken down into personnel expenditure by the operational commands, such as fixed salaries (PR expenditure), expenditure for exercises such as exercise allowances and fuel (OR expenditure) and expenditure for materiel such as maintenance and spare parts (MR expenditure). In 2015, this total expenditure rounded off to 3.4 billion euros (€2.2 billion for PR, €0.3 billion for OR and €0.8 billion for MR). This is approx. 45 percent of the total budgeted expenditure for the Ministry of Defence. The rest of the expenditure is for the most part allocated to pensions, investments, IT, and the personnel of the Ministry of Defence Staff, DMO and Support Command. With the exception of expenditure on pensions, this expenditure is also for the purpose of readiness, although more indirectly.

**Graph: Readiness expenditure 2015 (in € billion)**



### The planning and budgetary process

The CHOD's Instructions for Operational Readiness are key to directing the readiness process in the annual policy, planning and budget cycle, to which the adoption of the annual budget and accountability are central. The CHOD's Instructions for Operational Readiness correspond with the agreement regarding targets and means that the minister makes with Parliament in the budget during the year. Activities for readiness and deployment are expressed in sailing hours, person exercise days and flight hours. These are performance variables and they can be used as levers to steer the policy, planning and budgeting procedure. The CHOD assigns the number of sailing hours, person exercise days and flight hours connected to the readiness order.

Over the past few years, a system of norms has been developed, which provides a clear overview and verification for the estimated expenditure for the necessary personnel and materiel means. Once a year, the planning norms standards and planning rates used for it are adjusted. During the process of drawing up the CHOD's Instructions for Operational Readiness, they are used to determine whether the allocation of means is and remains in balance with the planned orders.

During the term of government, external developments may result in the means no longer being sufficient for the readiness targets set. This may result in measures being taken in the year of implementation itself in order to stay within the budgetary frameworks. These measures often impact on readiness, because the budget item for readiness activities (such as exercises) is one of the few budget items that can be adjusted in the year of implementation.

## Financing deployment

Ministry of Defence is reimbursed for the additional costs of both international and national deployment. This system has the same origin.

Since 2014, the additional costs for crisis management operations have been reimbursed from the international-security budget.<sup>20</sup> The definition of ‘additional and variable costs’ originates from a 1995 definition, which states that this refers to additional and materiel expenditure for peacekeeping operations taken from the Ministry of Defence budget for costs that are incurred from the moment that Dutch military personnel are actually deployed in the context of peacekeeping and humanitarian operations. This item does not include the costs of investments in equipment for peacekeeping operations.<sup>21</sup> In 2013, this definition was amended. Since then the costs for care and aftercare have been included in this definition. That includes the costs for the deployment readiness process, including investments in materiel that is procured for a mission and will be disposed of afterwards. Finally, it was agreed that ensuing ‘positive revenue effects’ such as exercises being cancelled and the increased and accelerated use of supplies and ammunition and the wear and tear of materiel would be calculated using new rates in future. These rates were intended to provide more insight into the actual marginal costs of crisis management operation, which as a result were expected to increase by 10 to 15 percent.

For national deployment, a covenant on the financing of the national deployment of the armed forces, *Financiering Nationale Inzet Krijgsmacht* (FNIK), was entered into by the Ministry of Foreign Affairs, the Ministry of Interior and Kingdom Relations, the Ministry of Security & Justice, and the Ministry of Defence in 2010. In this covenant it is agreed that additional expenditure for deployment for military aid and support will be paid for by the applicants (municipal authorities, the police force and the Public Prosecution Service).<sup>22</sup> Additional costs are described in the covenant as costs incurred by the Ministry of Defence for the purpose of the specific deployment of military means that would not be incurred without this deployment.<sup>23</sup> The financial system chosen was developed in 2010 in line with the rules in place at the time for financing the additional costs of crisis management operations. At that time, the costs for making troops ready for deployment were not included in that. The costs for training and exercises for military aid were therefore not reimbursed.<sup>24</sup>

Unlike for the international-security budget, the costs for national deployment are not estimated in advance. Instead, a lump-sum payment is budgeted on the basis of historical deployment. It is a case of ‘for better and for worse’. That is to say, surpluses remain available to the Ministry of Defence and deficits must be made up from the Ministry of Defence budget. Since 2015, the lump-sum payment has been just over €3 million. Of that, 59 percent is paid from the *Gemeentefonds* fund for the municipalities and over 40 percent is paid by the Ministry of Security and Justice. For setting off

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<sup>20</sup> Netherlands parliamentary paper II 2012/13, 33 400 V, no. 149. *Budget Internationale Veiligheid*, 12 July 2013.

<sup>21</sup> Netherlands parliamentary paper II 2011/12 32 503, no. 7. Letter *Aanscherping van de HGIS-afspraken over de financiering van crisisbeheersingsoperaties* (13 June 2012) For the origin of the definition, see: Netherlands parliamentary paper II 1994/95 24 337, no. 2. Netherlands policy paper *Herijking van het buitenlandse beleid*.

<sup>22</sup> *FNIK-convenant 2010*; Netherlands Ministry of Defence, Netherlands Ministry of Security & Justice, Netherlands Ministry of the Interior and Kingdom Relations, *Eindrapport Interdepartementale Evaluatie Convenant Financiering Nationale Inzet Krijgsmacht* (June 2015).

<sup>23</sup> *FNIK-convenant 2015*.

<sup>24</sup> *Eindrapport evaluatie FNIK*, 16; *FNIK-convenant 2010*.

additional costs within the Ministry of Defence, standard rates have been determined for some activities. In 2016, the daily fee (12 hours) for the deployment of a serviceman/woman is €55. The additional costs for the Explosive Ordnance Disposal Service to clear a conventional explosive are €263. This fee covers danger money, food and transport. Personnel costs are not included under additional costs.<sup>25</sup>

Long-term deployment and deployment for an exceptionally long period of time that claim a large share of the FNIK budget are settled separately. This arrangement has been put into practice a few times in recent years. Examples include the extensive efforts to recover the remains of the victims of the MH-17 aircraft disaster above Ukraine in 2014 and the deployment of 8,000 military personnel for the Nuclear Security Summit the same year.<sup>26</sup>

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<sup>25</sup> *Eindrapport evaluatie FNIK*, 8.

<sup>26</sup> *Evaluatie Nederlandse bijdrage aan missies en operaties 2015*, p. 42.

## 2 Readiness and the readiness process

This section describes the composition and scope of the Ministry of Defence over the years. It also covers readiness in the period from the start of 2011 to the end of 2015.

### 2.1 Towards deployment AND readiness

Following the collapse of the Soviet Union and the dissolution of the Warsaw Pact, it was considered extremely unlikely that a major power would want to attack Dutch territory. The government therefore decided to cash in a sizeable 'peace dividend', by radically reducing and restructuring the armed forces. This was first detailed in *Prioriteitennota*, the Ministry of Defence white paper of 1993 to review the priorities of the Ministry of Defence. The armed forces were reshaped as more expeditionary armed forces that were more suited to conducting peacekeeping operations. Expressed in today's terminology, the focus was shifted from core task 1 to core task 2.

An important lesson learned in the 1990s, however, was that deployment for peacekeeping operations was often for a longer period than first thought. In order to provide sufficient sustainability, the armed forces were set up for a four-stroke system, in which four comparable units of battalion size were available. With a view to this, the number of directly deployable units was increased, while reserve units such as mobilisable tank battalions were abolished. This materiel was considered surplus to requirements, as full mobilisation with a short response time no longer needed to be taken into account. Finally, civil-military cooperation became a core task (the third core task) for the first time. Even greater emphasis was placed on core task 2, and core task 3 came into the picture too.

Following the remit of 2000 and the attacks of 11 September 2001, a new Ministry of Defence white paper was published in 2003.<sup>27</sup> The basic assumption of the white paper was that the capability to defend NATO territory from a large-scale conventional attack was outdated. In practice, defending Allied territory was conducted through regional crisis management at its borders. Expeditionary armed forces were not necessary for this task. Greater focus was also placed on the third core task (national operations) by drawing up civil-military administrative agreements for the national deployment of the armed forces.

The new threat picture also became clear in crisis management operations, where the traditional 'Blue Berets' from Chapter VI of the Charter of the United Nations increasingly made room for operations under Chapter VII, which permits robust operations and is not dependent on the consent of the conflicting parties. These operations were characterised by a relatively short initial phase high in the spectrum of force of a maximum of one year, followed by a stabilisation phase of long duration. These considerations led to new deployability targets: The Netherlands no longer had to be able to deploy a brigade for longer than one year. In future, the armed forces would work with battalion or brigade task forces. These units and the crisis management operations would also be increasingly more 'joint'. In this way, the Netherlands indicated the ambition to be able to operate with its own division and chose to abolish capabilities that did not contribute to the expeditionary

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<sup>27</sup> Netherlands parliamentary paper II 2003/04 29 200 X, no. 4. *'Defensie in een nieuw evenwicht'*

character of the armed forces.<sup>28</sup> Based on the observation that the maximum capability that was available in the 1990s was never fully deployed and that the increased power of the weapons meant that the task forces could be smaller, the number of tanks, fighter aircraft and frigates, for example, was reduced.

One year after the Netherlands started the NATO ISAF mission in Uruzgan, a new policy paper was presented in 2007. The Uruzgan mission was presented as exemplary for the compact expeditionary configured armed forces that worked to a 3D approach of diplomacy, defence and development.<sup>29</sup> The policy paper stated that the current ambition level would remain in full force. While no formal changes were made to the deployability targets, it was the intention that they would be read differently.<sup>30</sup> As of 2007, 'simultaneous participation over a prolonged period in a maximum of three operations at the low end of the spectrum of force with task forces of battalion size' could also be interpreted differently. As the configuration of the task forces had been in place since 2003, they did not give an accurate picture of the scope of actual deployment. Following the link with supporting units – not least enablers such as helicopters and logistics – the basic unit of a battalion (600-800 military personnel) became a task force that was one to two-and-a-half times as large. As operations became increasingly far from home and increasingly robust, a need for increased support greatly increased – if only due to the demands made on transport.

The difference in the lower and higher ends of the spectrum of force was hardly evident in practice. The ISAF mission therefore had to be seen as three times the contribution of a task force at battalion level.<sup>31</sup>

Due to these changes in practice - whereby the ambition level on paper was upheld - the capability numbers cited in the deployability targets and the total capability of the armed forces were no longer in line. At the same time, the third core task was becoming increasingly more important. In the project to intensify civil-military cooperation (ICMS), the Ministry of Defence guaranteed the capabilities that should be available to civilian authorities within set periods of time. In doing so, the Ministry of Defence evolved from a last resort for the civilian authorities to a fully fledged security partner.

The credit crisis (2008) proved to have a sizeable impact on the government's expenditure, and the Ministry of Defence was no exception to this. The decision was taken to reduce the armed forces by 12,000 FTEs, which was over 18 percent of the total size, and to greatly reduce materiel. The Ministry of Defence's deployability targets, however, were not adjusted. An adjustment did follow two years later, in the white paper '*In het Belang van Nederland*' (translated into English as 'In the interest of the Netherlands'), which was published in November 2013. The underlying principle of the white paper is versatile, sustainable armed forces: armed forces that can be deployed without compromising training or the other tasks of the armed forces. The government made the decision to keep in place the diverse range of basic capabilities. A combination of basic and niche capabilities was therefore also kept in place.

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<sup>28</sup> Ministry of Defence white paper 2003, p. 25.

<sup>29</sup> Netherlands parliamentary paper II 2006/07 31 243, no. 1. Netherlands policy paper *Wereldwijd dienstbaar*.

<sup>30</sup> Netherlands policy paper *Wereldwijd dienstbaar*, 13, 14.

<sup>31</sup> Netherlands policy paper *Wereldwijd dienstbaar*, 13, 14.

With Russia's annexation of Crimea in the summer of 2014, the focus returned to conventional warfare. Hybrid warfare also became an important point of focus. In order to prevent further Russian aggression, NATO went into action to protect the Baltic States by means of joint assurance measures such as Baltic Air Policing. During the NATO summit in Warsaw in 2016, the decision was taken to establish a multinational enhanced Forward Presence as a deterrence and, if necessary, defence. The effectiveness of these activities depends on the credibility of the NATO units and the credibility of the units in the Baltic States is determined by the deployability of the units. The deployability is, in turn, determined by the adequacy and preparedness of the troops for armed engagement, the immediate availability of the necessary materiel (ammunition, vehicles, logistic facilities), and the rules of engagement. In the letter to Parliament regarding the coherence of the Dutch efforts in missions, the government also stated that armed conflicts and humanitarian crises were becoming increasingly complex. As a result, long-term deployment of the international community, including the Netherlands, was becoming increasingly common in all aspects of the integrated approach. This constantly called for an assessment of the armed forces' available capabilities and means of deployment.<sup>32</sup>

Where during the Cold War *readiness* for deployment was the main aim of the armed forces, in the 1990s and the first decade of the 21st century, the actual *deployment* of the armed forces for international crisis management operations was the main aim. Today, in the current circumstances, *both deployment and readiness* of the armed forces have become strategically important. And that applies to all three core tasks of the armed forces at the same time.

## 2.2 Scope and composition of the armed forces over the years

The above overview of the policy changes since the fall of the Wall describes and gives the historical context for (1) the cashing in of the peace dividend and the shrinking financial means for the armed forces, (2) an international context that changed from peacekeeping missions and interventions in local – often domestic – conflicts far away from the Netherlands to a ring of instability around Europe, (3) the change in the focus of the armed forces from a focus on readiness in the Cold War to a focus on deployment in the 1990s and the first decade of this century, to a focus on deployment AND readiness today, (4) choices that were made in order to comply with budgetary remits (disposal of aircraft, vessels and tanks), (5) choices that were made with regard to the organisation of the armed forces, such as the centralisation (pooling) of general support services, such as vehicles, communication and other services, with the intention to make the expected efficiency savings, (6) the choices that were made to save the primary tasks/capabilities at the cost of the supporting tasks, with the result that the pool became rather shallow, and the provisions in spare parts and exercise materiel cut, (7) the government decision to leave intact the broad spectrum of capabilities, even if they were very meagre, (8) the choice to lower the level of ambition and with it the deployability targets in order to make readiness achievable within financial frameworks, (9) the development of the concept of joint units, as a result of which the impact on the readiness of other organic units increased, (10) the underestimation of the impact of deployment on readiness, especially if the mission is continued for a longer period, (11) the reduction of the investment programme, and last

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<sup>32</sup> Netherlands parliamentary paper II 2015/16, no. 9.



but not least (12) the huge effort of the armed forces to deliver nonetheless, and the inventiveness demonstrated to make deployment possible.

All of the above is understandable in view of the time in which the choices were made, but the combined effect has resulted in the erosion of the foundation for adequate readiness in combination with meaningful deployment. The combination of the limited availability of enablers and trailing investments, for example, will not result in sustainably deployable armed forces.

Due to this combination of factors, managing the Ministry of Defence can be challenging, and in certain respects unusual and even unique. The above overview of the historical developments of the Ministry of Defence is necessary to put the current challenges and problems with readiness in the right perspective. The situation and strength of the armed forces at the end of the Cold War is the starting point.

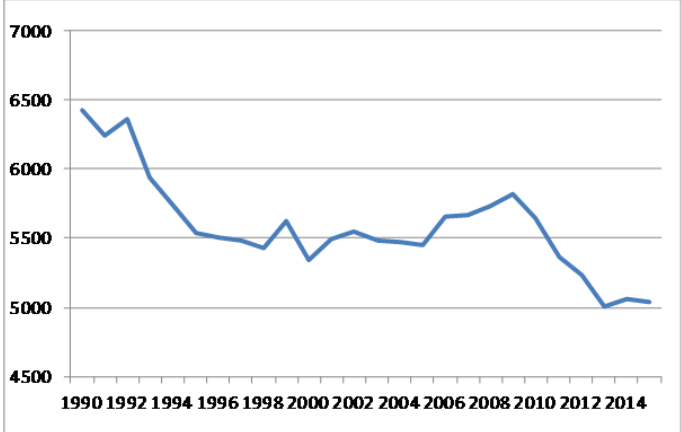
**Table: Historical overview of changing capabilities (1990-2016)**

<b>Capabilities at the time of policy documents and policy papers</b>	<b>1990</b>	<b>1993</b>	<b>2000</b>	<b>2003</b>	<b>2006</b>	<b>2010</b>	<b>2011</b>	<b>2013</b>	<b>2015</b>	<b>2016*</b>
Tanks (MBT)	931	798				60	0	0	0	0
Armoured vehicles (M113/YPR/CV90)	1185					395		351	322	270
Armoured Howitzers	236	160				31	31	31	24	24
F-16s	211	138	120	90	90	87	68	61	61	61
Helicopters	114		89		60	62	55	64	72	72
Maritime patrol aircraft	13	13	10	10	0	0	0	0	0	0
Frigates	16	18	15	13	9	6	6	6	6	6
Mine countermeasure vessel	15	15	12	12	10	10	6	6	6	6
Number of infantry battalions	15									7
MOB complexes	90									4
Number of military personnel in active service	104,196**	85,686**	51,805	53,184	49,246	48,393	45,422	43,202	41,362	40,786
Number of deployed military personnel	642**	6,902	6,039	8,100	5,843	3,929	2,508	2,322	3,168	2,735
Number of operations	3	15	13	16	25	21	21	22	28	26
Percentage of deployed military personnel	0.62	8.05	11.6	15.2	11.9	8.1	5.5	5.4	7.7	6.7

\*= years in which a Ministry of Defence white paper was published. \*\*= including conscripts; 1990 = budgeted strength. The blue blocks indicate data that was not available at short-notice.

Interestingly, this data shows that in 1990 the Ministry of Defence had a conscript army with a large arsenal of capabilities, of which a significant part was stored in storage depots for mobilisation, known as MOB complexes. Effectiveness and redundancy were priorities for the organisation of the armed forces. Since then, the nature of the armed forces has been very different. In the years after 1990, we see a huge drop in the number of capabilities, including the termination of the mobilisable capability, while the number of international operations and the number of military deployed abroad increase. The armed forces transformed into expeditionary armed forces. In the period after the turn of the century, efficiency measures and pooling became increasingly important during the organisation and structure of the armed forces and this compromised effectiveness.

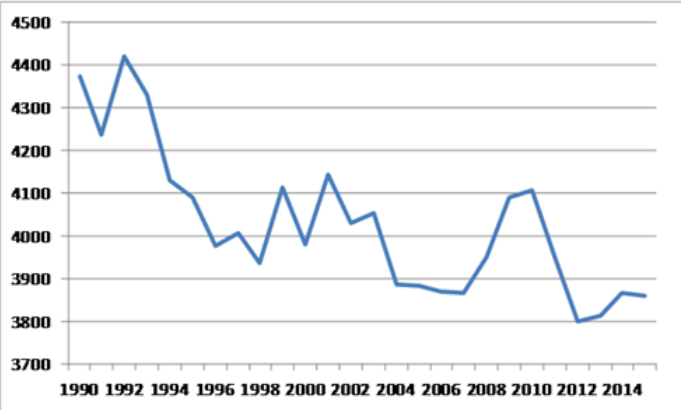
**Graph: Real Ministry of Defence budget since 1990 (x €1,000)**



Source: Ministry of Defence annual reports

The above overview illustrates that in real terms - the value corrected for inflation - the Ministry of Defence budget dropped by 22 percent in comparison to the budget that was available at the end of the Cold War. Deducting the investments and pension costs from the total Ministry of Defence budget gives some idea of the amount of the budget that is available for the readiness process. In real terms, this budget dropped less quickly: by 12 percent in comparison to 1990. The amount of the budget that was spent on investments in real terms was halved in this period. The nominal value of the Ministry of Defence budget as a whole did rise up to and including 2012.

**Graph: Real Ministry of Defence budget minus pension costs and investments since 1990 (x€1.000)**



Source: Ministry of Defence annual reports

**Graph: Deployability targets of three specific capabilities (1993-2014)**

OPCO	1993 <sup>1</sup>	2000 <sup>2</sup>	2003 <sup>3</sup>	2006 <sup>4</sup>	2011 <sup>5</sup>	2014 <sup>6</sup>
RNLAF (F-16)	56 (4 x 14)	56 (4 x 14)	42 (3 x 14)	42 (3 x 14)	14 (1 x 14)	4
RNLN	8 frigates	8 frigates	6 frigates	6 vessels	2 to 6 vessels	2 vessels
RNLA (battalions)	4	4	3 joint	1 joint battalion (ISAF)	1 to 3 battalions	1

Sources: Ministry of Defence white papers: 1 *Prioriteitennota*, 2 *Defensienota*, 3 *Defensie in een nieuw evenwicht*, 4 *Wereldwijd dienstbaar*, 5 *Defensie na de kredietcrisis*, 6 *In het Belang van Nederland* (NB. the white paper was published in 2013, but the deployability targets stated in it came into force as of 2014).

The above overview illustrates the reduction in the deployability targets for three specific capabilities: F-16 fighter aircraft, large RNLN surface vessels and RNLA battalions. The cutbacks of 2003 and 2011 were ‘breaking points’ with regard to the readiness and deployability of the armed forces. Nonetheless, it is clear that the armed forces attempt to reduce the consequences of the cutbacks in the years after 2003 and 2011. The RNLAF reduces unit size, and from that moment on the RNLN counts not only frigates as maritime units but other vessels too, including logistics vessels. The ‘joint task force’ is also introduced.

## 2.3 Readiness over the years

**Table: Realisation of deployability targets over the years (2013-2016)**

	Q1 2013	Q2 2013	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016
Inzetbaarheids doelstelling 1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Inzetbaarheids doelstelling 2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Inzetbaarheids doelstelling 3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Inzetbaarheids doelstelling 4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Source: Own analysis on the basis of management reports.

Key: green is ‘deployable’ in accordance with the norm, green with an orange corner is ‘achievable with limitations’, orange means that deployability is ‘partially realisable’.

As described in paragraph 1.3, it must be determined for each core task which capabilities and units must be available (deployability targets) to meet the deployability targets. This has been determined for deployability targets 2, 3 and 4, but it has not been explicitly determined for deployability target 1. That is to say it has not been specified in an order which capabilities and units must be specifically deployable in order to meet this target.

Since the publication of the white paper ‘In the interest of the Netherlands’, the Ministry of Defence has reported that deployability target 2 is ‘achievable with limitations’. There is too little combat support (CS) and combat service support (CSS) available for simultaneous (one-off) deployment of a

brigade task force, a maritime task force or eight fighter aircraft. At the same time, operating independently (i.e. without additional international support) is not possible on more than one long-term operation. Deploying a second battalion task force for a short period of time is not possible either, also due to a lack of CS/CSS capacity. The deployability targets have been set in such a way that full-scale simultaneous deployment for deployability target 1 and 2 is not possible. Ultimately, there is a single total set of units that carry out all tasks. There are hardly any units that exclusively perform one deployability target. The disadvantage of this is that it is not explicitly clear when a target is 'achievable', 'achievable with limitations' or 'unachievable'. This is assessed internally by the Ministry of Defence on the basis of management reports from all Ministry of Defence elements.

The general readiness is influenced by the long-term participation in one-sided missions low on the spectrum of force. The result is a reduction in the general readiness of operations high on the spectrum of force, for example, or operations in larger alliances. In addition, there are also restrictions on the readiness of materiel and personnel/specialised personnel. This means that a longer period of preparation is needed for deployment in high threat scenarios.<sup>33</sup> Operations of this type are typical of deployability target 1.

Since the third quarter of 2014, deployability target 3 (national tasks) has been considered 'achievable with limitations'. Of the nineteen guaranteed capabilities, four have limitations to their availability. This concerns the CS and CSS units. The affected capabilities are the decontamination capability for chemical, biological, radiological or nuclear (CBRN) incidents, the availability of role 1 medical facilities, a mobile emergency hospital and platoon ambulances, the back-up facilities for the failure of existing connections and the deployment of unmanned aircraft in the Caribbean. In 2015, these limitations extended, affecting more guaranteed capabilities.<sup>34</sup>

In the third quarter of 2015, the Minister of Defence informed the House of Representatives that deployability target 1 was only 'partially realisable'. Across all four of the OPCOs, the basic readiness of several units is insufficient. Units are trained to conduct planned missions, but not to conduct all possible missions across the full spectrum of force.<sup>35</sup> As this is combined with NATO's increased expectations, the result is that the Ministry of Defence does not fully meet these deployability targets. The increased NATO readiness requirements put greater pressure on the armed forces, as they demand faster deployment of greater numbers of larger robust units, which also assumes greater sustainability, meaning logistically self-sufficient units with their own stocks and ammunition. The sudden change in assessment of deployability target 1 from the second to the third quarter of 2015, when it 'jumps' from fully green to partially orange (partially realisable) is striking, as it is not clear exactly which elements of the OPCOs caused this change. This can also be attributed to the fact that it is not made explicitly clear which specific capabilities and units must be ready in order to meet this deployability target.

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<sup>33</sup> Netherlands parliamentary paper II 2014/15 34 200 X, no. 1. *Jaarverslag Defensie 2014*, p. 135

<sup>34</sup> Netherlands parliamentary paper II 2014/15 34 200 X, no. 1., p. 139; Netherlands parliamentary paper II 2015/16 34 475 X, no. 1., p. 138, 139.

<sup>35</sup> Netherlands parliamentary paper II 2015/16 34 475 X, no. 1., p. 137.

## Readiness experiences in other countries



Many Western armed forces see readiness as the greatest challenge they face in the years to come. Many countries are facing a lack of materiel readiness, stocks, spare parts, and staffing, as well as a backlog of maintenance requests for Ministry of Defence facilities, terrains and buildings. Great efforts are focused on providing deployment in the short term. Often, this jeopardises exercises to achieve or maintain the general level of readiness. Partly in light of the security challenges posed by Russia, North Africa and the Middle East, in 2014 NATO decided to set up a NATO Readiness Action Plan.<sup>36</sup>



The 2015 annual report for the German parliamentary committee of the German federal armed forces concluded that the armed forces could perform all tasks but that the limitations of the armed forces' personnel and materiel were clearly in sight. The German minister described her first visit to the armed forces, where she was faced with a situation that was representative of the German armed forces as a whole. She visited an armoured infantry battalion that was training for its task in the NATO Response Force. She commented that there were too many shortages. The battalion, she reported, had to 'borrow' 15,000 pieces of equipment – large and small – from other units from the brigade and the division, from the army and from the armed forces as a whole. It had to 'borrow' in order to be fully equipped for the NATO task. She concluded that as a result, this endangered the deployment readiness, exercises, training and – in the worst case scenario – life and limb during the deployment. The German armed forces have a great shortage in materiel readiness. This was in part the reason that available materiel was always allocated to deployment first, resulting in a shortage of materiel for exercises.<sup>37</sup>



The US Army is working on initiatives to prevent the 'readiness cliff' following a deployment. The US readiness model was designed in such a way that after a mission, trained officers, NCOs and other ranks would leave the unit to move to a new base, start a training course, or be promoted. As a result, the preparedness of the unit dropped significantly. After deployment, materiel was out of circulation for a long period due to maintenance or was left behind in the mission area. Even the country with the largest defence budget in the world 'does not have the resources to withstand a post-mission readiness cliff. Therefore we must focus our attention on enhancing the fundamental logistics components needed to master materiel readiness.'<sup>38</sup> The new 'Sustainable Readiness Model' attempts to improve this and increase the readiness of the US armed forces in doing so.



In the United Kingdom, warnings about the readiness of the British armed forces have already been included in various reports for more than ten years. Due to the high pace of rotations for large operations in Iraq and Afghanistan, these missions compromised the general readiness of the armed forces. As a result, it was no longer possible to meet all its deployability targets across the spectrum of force. In 2010, the Ministry of Defence could not say how long it would take to meet the readiness norm again.<sup>39</sup>

<sup>36</sup> NATO, NATO's Readiness Action Plan (Factsheet July 2016).

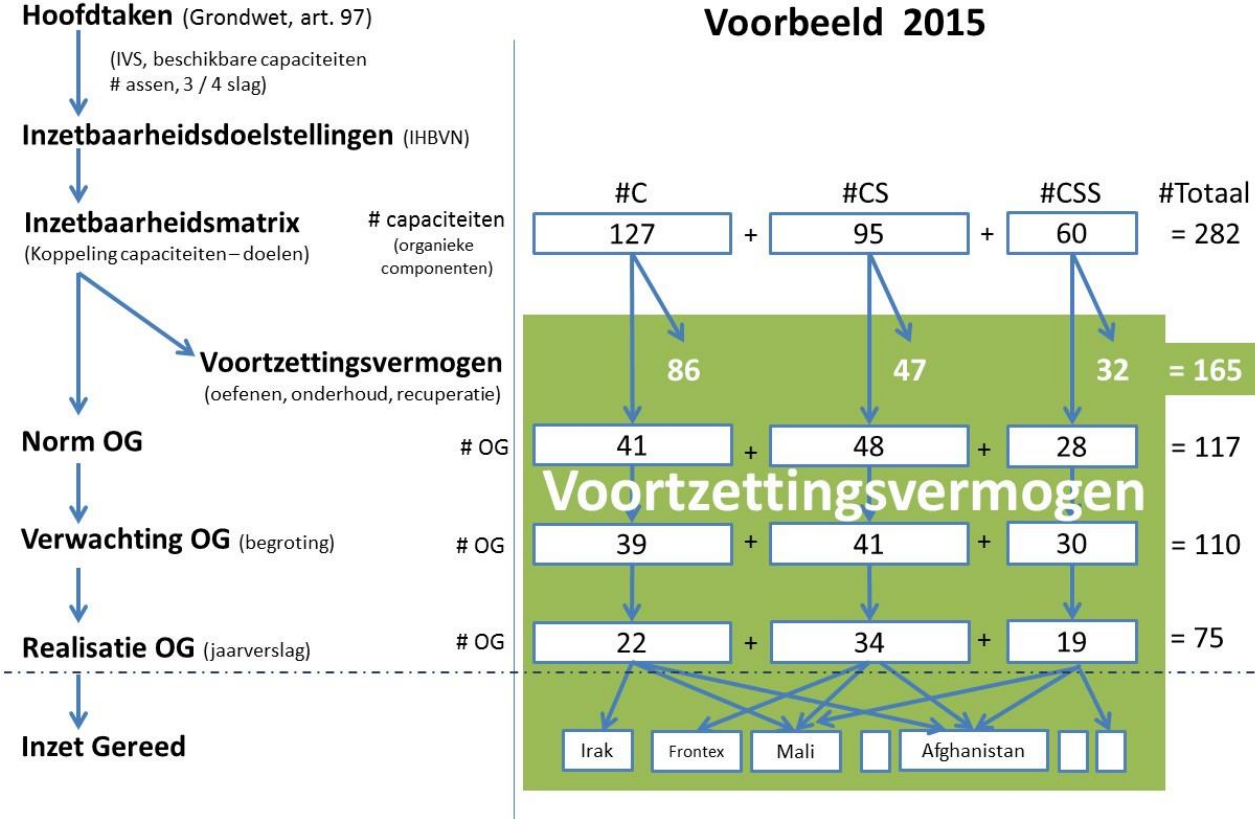
<sup>37</sup> German Federal Parliament, *Unterrichtung durch den Wehrbeauftragten. Jahresbericht 2015* (Printed matter 18/7250 26 January 2016), 5-11.

<sup>38</sup> Flem B. Walker, 'Building and sustaining readiness across Forces Command formations', *Army Sustainment* magazine (2 May 2016).

<sup>39</sup> UK National Audit Office, UK Ministry of Defence: *Assessing and Reporting Military Readiness* (15 June 2005, House of Commons Defence Committee, *Readiness and recuperation of the Armed Forces: Looking towards the Strategic Defence Review*. (Fourth Report of Session 2009–10), 21, 22.

The figure below gives an overview of the cascade of the total volume of the capabilities of the armed forces to the organically ready units. The year 2015 is illustrated in the figure. According to the usability matrix, the armed forces had at their disposal more than 282 capabilities in total, divided across three categories: Combat (C), Combat Support (CS) and Combat Service Support (CSS).<sup>40</sup> According to the OR norm, 117 of these capabilities should have been made ready in 2015. In order to sustainably realise the deployability targets, a greater volume of capabilities is needed than the amount stated by the OR norm. While part of the total capability is operationally ready, another part is training for relief, conducting maintenance or recuperating (collectively the sustainability). This explains the difference between the total number of capabilities in the example below (282) and the total capabilities of the OR norm (117).

**Overview: From core tasks to realised organic readiness**



Source: *Begroting en jaarverslag Defensie, 2015*

The real expectation in the 2015 budget was that 110 capabilities would be organically ready or would be operationally ready ‘with limitations’. The ultimate realisation was 75 capabilities operationally ready.

The difference between the OR norm (117) and the expected OR (110) can be explained by the disruptions that were foreseen prior to the year. The difference between the expected OR (110) and the realised OR (75) is due to the unforeseeable disruptions that occurred during the year of

<sup>40</sup> Due to over-representation in the figure, this is exclusively the FTEs reserved for expeditionary deployment of the Royal Netherlands Marechaussee and the EOD service. For details of the 282 capabilities, see Appendix 5.

implementation. The difference between the expected and realised readiness is accounted for in the 2015 annual report. There are several reasons for it. A few examples are given here.

Due to a delay in the preparation process of HNLMS Tromp in the first quarter of 2015, there was only one LC frigate operationally ready in the first quarter of 2015. The aim of the National Reserve Corps was not met, because one of the three battalions did not meet the readiness norm in the fourth quarter of 2015. The reason for this is that most of the instruction and training activities, training courses and operations management events were cancelled due to measures taken to remain within the financial frameworks. In addition to the shortage of spare parts, export regulations in particular (International Traffic in Arms Regulation, ITAR) caused delays in phase inspections, modifications and the retrofit programme of the NH90. As a result, the level of materiel readiness is inadequate. Due to the deployment in Iraq, there were fewer flight hours available for the instruction and training programme, as a result of which the crews of the F-16s were not trained and deployable for all possible types of operational missions. As a result, 0 F-16s were operationally ready.

The situation in 2015 is representative of the usability matrix for the realised OR in the period 2011-2015. In all years, we see that the realised OR differs from the OR budgeted for in the planning by twenty to twenty-five percent.

The graph below shows the readiness over the past five years (2011 to end 2015). It shows the percentage of the capabilities that met the OR norm. Each capability (all F-16s, all submarines, all battalions, etc.) were given equal weighting. It shows that some of the capabilities structurally did not meet the norm. Furthermore, the percentage of CSS capabilities meeting the norm gradually dropped from 100 percent to 50 percent and the percentage of C and CS capabilities meeting the norm dropped from 70 percent to 60 percent.

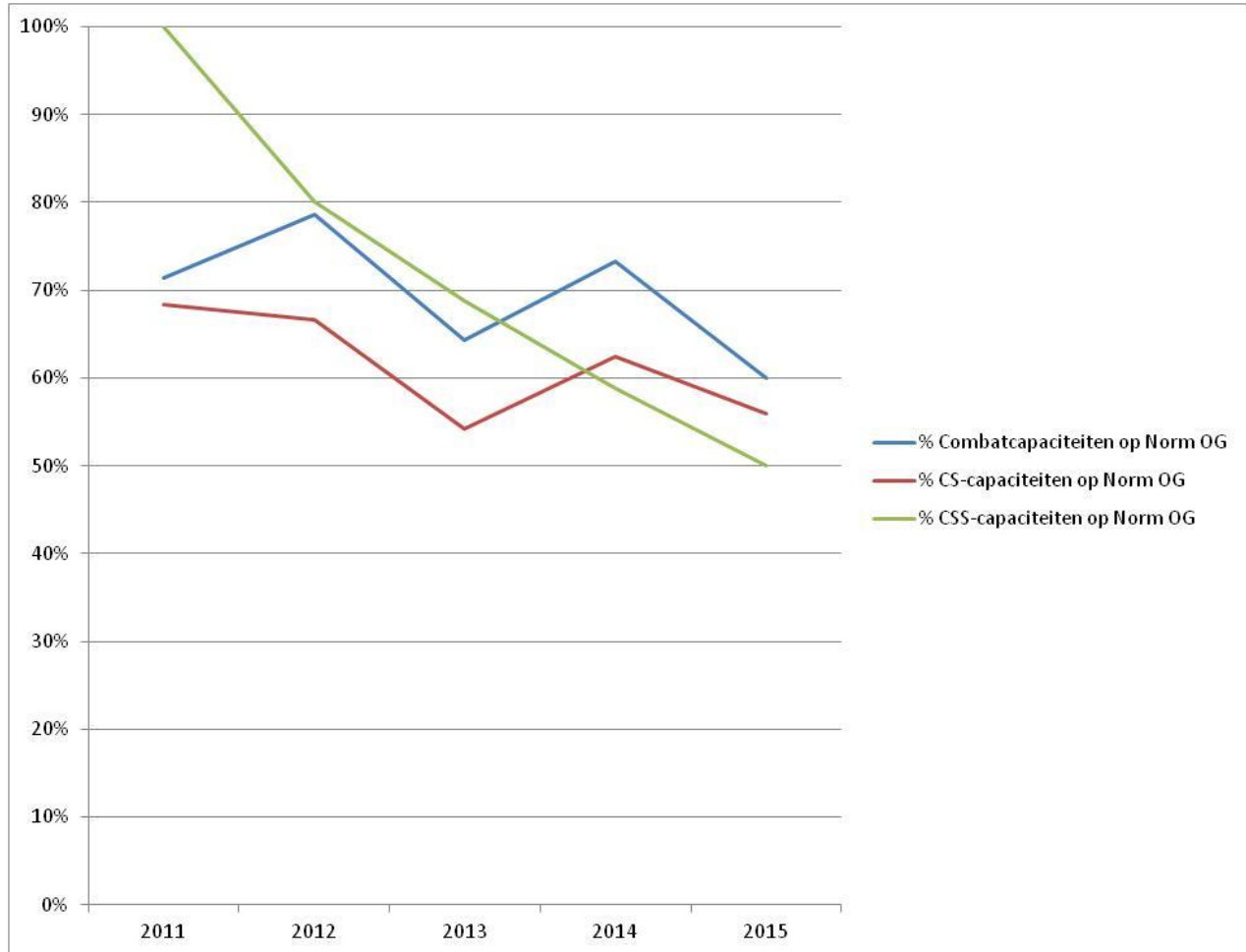
The Rutte II government halted the trend of the decreasing expenditure of the Ministry of Defence. The government took several steps to strengthen the armed forces and added €870 million to the Ministry of Defence budget.<sup>41</sup> There are various components to this addition to the budget. Around €500 million in increasingly larger instalments up to 2020 will be used to bring the readiness status up to the norm by 2021. Another part will go to investments, because an impulse is also needed in that area. The expectation is that the basic readiness of the armed forces, or rather the full realisation of the OR norm of the various capabilities, will be achieved by 2021.

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<sup>41</sup> Netherlands parliamentary paper II 2016/17 34 550 X, no. 2., 14 *Memorie van toelichting op de begroting van Defensie 2017; Verslag houdende een lijst van vragen en antwoorden over de begroting van Defensie 2017* (7 November 2016).



**Graph: Percentage of the number of capabilities meeting the OR norm (2011-2015)<sup>42</sup>**



Source: Figures from Ministry of Defence annual reports (2011-2015).

The fact that not all capabilities meet the norm is the result of the issues with personnel and materiel/or readiness. Exercises were primarily focused on readiness for planned missions, for example. As a result, there was insufficient training across the full range of the organic task profile. Prioritisation resulted in a slight drop in the C and CS capabilities in the 2011-2015 period. However, the impact on the CSS capabilities was much greater. The assumption was made that international opportunities for pooling could be used for CSS, but in practice this was not possible due to international shortages. A shortage in CSS capabilities, prioritisation of actual deployment and the deployment of CSS capabilities that made high demands on senior personnel resulted in insufficient capacity to support a minimum readiness cycle.

<sup>42</sup> The figures in the graph reflect an equal weighting of all amounts and types of capabilities. Whether or not the OR norm was met for the capabilities was considered separately for each one, as detailed in the appendix. The drop in 2013 is above all the result of not all fire support capabilities reporting being OR and the addition of the NH90, with a negative score, to the statistics.

### 3 Deployment and readiness

This section describes the impact of national and international deployment on readiness and the readiness process. The Ministry of Defence budget does not make a distinction between deployment and the readiness process. In other words, the readiness process is an integral part of the task of the armed forces. As a result of deployment for the three core tasks of the armed forces, there are second- and third-order effects on the readiness process. These are described below. Finally, the permanent presence in the Caribbean is described.

#### 3.1 The impact on readiness of second- and third-order effects of deployability

The study showed that deployment not only impacts the readiness of the deployed unit, but also the readiness process of other units. In order to differentiate between the various effects, a distinction is made between first-, second- and third-order effects. First-order effects are the effects of deployment on the unit itself or the deployed unit. It is assumed that the additional costs incurred by deployment of the armed forces are reimbursed. Second-order effects are the effects that the deployment of a unit has on a larger unit (e.g. a brigade). Third-order effects are the effects that are also felt beyond the brigade or the OPCO.

One example of first-order effects is 'one-sided' deployment leading to 'one-sided' readiness. During deployments, units are often deployed for a limited number of tasks, and as there is often a shortage of the time and resources needed to train all skills, the preparedness of the units becomes one-sided. The deployment of F-16s in the fight against IS, for example, focused on bombing, and other tasks such as interception were not trained. In order to compensate for such one-sided deployment, catch-up efforts need to be made on the units' return in order to make them ready for the whole spectrum of force. As a result, there is a peak in expenditure after recuperation that is currently not reimbursed as additional costs.<sup>43</sup> In many cases, there is also insufficient time to carry this out.

An example of a second-order effect is the wear and tear of materiel during missions. This wear and tear often proves to be much greater than expected, which can often only be ascertained afterwards during maintenance. The lack of availability of scarce materiel is therefore higher/much higher, which has a negative impact on the exercise programme of the units, and potentially other units too.

The so-called 'small contributions' to missions, that is to say a limited contribution to an operation in the form of specific expertise or specialists, also cause second-order effects.<sup>44</sup> Experience shows that deployment for small contributions such as these often makes high demands on senior personnel.<sup>45</sup> In July 2015, the Ministry of Defence calculated that of the 652 military personnel deployed by RNLA for small contributions to missions, 60 percent were officers or NCOs. As the missions are conducted by joint units, many organic units are affected, as they are left with a lack of senior personnel, making it more difficult for them to carry out exercises. Only just over a quarter of all deployed officers and NCOs have come from combat positions. As a result, these missions draw heavily on

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<sup>43</sup> The exception to the rule was the allocation of a one-off budget for additional flight hours in 2015 in order for the F-16s to be trained to be more operationally ready. This budget was not, however, sufficient to bring the level of readiness of the pilots up to the OR norm. See: Netherlands parliamentary paper II 2014/15, 27 925 no. 544. *Lijst van vragen en antwoorden over verlenging Nederlandse bijdrage aan de internationale strijd tegen ISIS* (27 June 2015).

<sup>44</sup> The added value of a "small" Dutch contribution is in many cases the high quality of the armed forces and therefore the ability to perform complex tasks and roles.

<sup>45</sup> A small contribution is a contribution smaller than the level of battalion task force.

scarce specialist support from combat support and combat service support (which are crucial for larger exercises).<sup>46</sup>

One example of a third-order effect is that due to the shortage – and in some cases critical shortage – of enablers, these are available for the deployed unit but there is too little capacity to support the exercises of units working through the readiness process. Night vision equipment is a concrete example. Due to shortages, the units working through the readiness process do not have this vital equipment at their disposal. Exercises are therefore cancelled or changed. In addition, the national tasks allocated to deployed units have to be carried out by the units that have not been deployed, which also disrupts or delays the readiness process.

The MINUSMA mission in Mali, for example, has caused third-order effects that can also be felt beyond the brigade or the OPCO. In April 2014, the Netherlands sent an integrated unit to Mali that included commandos, CIS units, and combat and transport helicopters. In order to increase the effectiveness and reach of the units in the mission area, they used vehicles intended for the 13th Light Brigade. Prior to the mission, the government estimated that there was sufficient capacity and sustainability to continue the contribution made for at least two years. The government stated that neither the operational capabilities of the Dutch units, nor other current missions would be affected by participation in MINUSMA.<sup>47</sup> In June 2015, it became clear that the deployment of Chinook crews in Mali meant that there was a shortage of available crews in the Netherlands. As a result, the Airmobile Brigade, for example, are not able to exercise as well, meaning that it has limitations to its operational readiness and will not be able to fully recover this until the MINUSMA mission has been completed.<sup>48</sup> Rolling stock that was intended for the readiness process of the 13th Light Brigade is being used by other units on the MINUSMA mission. As a result, the 13th Light Brigade can only equip one of its two infantry battalions with some of the vehicles. It is reported that the other infantry battalion is forced to resort to training for operations on foot.<sup>49</sup>

We also see second and third-order effects of national deployment. Preparation and deployment for these tasks are carried out alongside the regular readiness process, which can impact the current exercise programmes. The number of accepted requests from civilian authorities increases each year and almost quadrupled between 2010 and 2015. Some believe that civilian organisations request support from the Ministry of Defence in order to compensate for structural capacity problems on their part.<sup>50</sup>

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<sup>46</sup> Directorate of Operational Readiness policy paper, *Invloed van kleine missies op gereedstelling CLAS*, 27 November 2015.

<sup>47</sup> Netherlands parliamentary paper II 2013/14 29 521, no. 215. *Lijst van vragen en antwoord op Artikel 100-brief Minusma* (4 December 2013).

<sup>48</sup> Netherlands parliamentary paper II 2014/16 29 521, no. 293. Article-100 letter *Verlenging Minusma* (19 June 2015).

<sup>49</sup> Netherlands parliamentary paper II 2015/16 34 475 X, no. 1., p. 41

<sup>50</sup> *Eindrapport evaluatie FNIK*, 9.

**Table: Incidental deployment of the armed forces for military aid and support**

	2010	2011	2012	2013	2014	2015
<b>Number of deployments</b>	65	101	136	160	197	243
<b>of which for judicial authorities</b>	27 (42%)	43 (43%)	94 (69%)	99 (62%)	123 (62%)	143 (59%)
<b>Number of EOD clearances</b>	1543	1904	1578	1857	1998	1837

Source: *Jaarverslag Defensie 2015, 2014, Eindrapport interdepartementale evaluatie FNIK*

In addition to national operations, the armed forces were deployed for countless events and ceremonial occasions, including national events such as 4 and 5 May and the ceremony surrounding the presentation of letters of credence. These activities are scheduled, but do take up a lot of time and capacity. For the ceremonial aspects of the opening of the parliamentary year, for example, more than 2,000 military personnel are deployed. The preparation, training, catering and transport take up many more man-days than the ceremony itself. As this deployment is not reimbursed, it has to be included in the regular budget of the operational command.<sup>51</sup> In addition, the armed forces perform community support activities on an incidental basis to support charitable organisations. Examples of community support activities are building the annual pontoon bridge for the International Four Days' Marches in Nijmegen and transporting goods to the Memorial Center at Camp Westerbork.<sup>52</sup> The amount of time spent on community service activities is unknown, but this deployment seems to be on a relatively small scale and can be scheduled.<sup>53</sup>

**Table: Annual deployment for national tasks, ceremonial support and community service activities by the RNLA (2015)**

National tasks	Budget or reimbursement	Possibility to schedule/time spent	Impact on readiness	Man-days
<b>Military aid and support</b>	FNIK	Almost impossible to schedule, a lot of time spent	High	50,000
<b>Military aid and support for migration</b>	One-off financing beyond FNIK	Almost impossible to schedule, a lot of time spent	High	5,000
<b>Training for military aid and support</b>	Regular budget	Possible to schedule, a lot of time likely to be spent	Average	Unknown
<b>Host nation support</b>	Additional costs	Possible to schedule, a lot of time spent	Average	40,000
<b>Ceremonial support and events</b>	No reimbursement, regular budget	Possible to schedule, a lot of time spent	Average	>10,000
<b>Community service activities</b>	---	Possible to schedule, not much time spent	Low	Unknown
<b>Unscheduled public requests</b>	---	Not possible to plan, infrequent	Average	Unknown
<b>Support for other</b>	---	Unscheduled, variable	High	Unknown

<sup>51</sup> Netherlands Ministry of Defence, *Aanwijzing HDFC-080\_1. Verrekenen van activiteiten ten behoeve van partijen buiten defensie* (5 August 2013).

<sup>52</sup> *ICMS-catalogus*, paragraph 14.5 *Maatschappelijke dienstverlening*.

<sup>53</sup> Netherlands Ministry of Defence, *Aanwijzing HDFC-080\_1*. The additional costs of community service activities can be invoiced, but whether this is done is up to the commander.

<b>OPCOs</b>		amount of time spent		
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Source: Analysis on the basis of information from the RNLA.

The data in the above table shows that the deployment of the RNLA for national tasks, ceremonial support and community support activities is much greater than was estimated. Due to the high amount of time spent and the limited possibility to schedule the activities, their impact on readiness is high. In 2015, the number of man-days that the RNLA needs to carry out national tasks was the equivalent of a battalion exercise programme (in man-hours per year). That is a lot, especially in view of the fact that per year two battalions are made ready through the regular readiness process. It is true that these figures for 2015 were strongly influenced by aid in the context of assisting and accommodating migration flows to the Netherlands. These additional costs were reimbursed separately. It is nonetheless the case that large separately financed deployments also occurred in previous years. Examples include the extensive efforts to recover the remains of the victims of the MH-17 aircraft disaster above Ukraine in 2014 and the deployment of 8,000 military personnel for the Nuclear Security Summit the same year.<sup>54</sup>

### 3.2 The additional costs of deployment and reimbursement

Due to the wide range of different types of units and the many interdependencies in the readiness process, it proved impossible to calculate the full actual costs, including second- and third-order effects, of a single deployment. This was the case for both national and international deployment. It was possible to calculate the costs of individual capabilities for three individual cases. Although it is not possible to generalise the actual costs of deployment on the basis of the case studies, the analyses of individual capabilities do demonstrate how actual deployment can lead to additional costs. This is broken down for three missions in the table below: deployment of an infantry battalion for the policing mission in Kunduz; participation in Operation Ocean Shield by an LPD and the expenditure on readiness for the Defence Ground-based Air Defence Command as a whole during the Patriot mission.

The second- and third-order effects of international crisis management missions are not financed by the international-security budget; instead they must be included in the budget of the units. Calculations of these effects for three different missions show that the financial impact of these second- and third-order effects is significant. In the case studies the costs of deployment were the equivalent to between 125% and 200% of the reimbursed costs. More research is needed to be able to apply this calculation beyond these case studies.

**Table: Calculation of actual mission costs (in € million)**

<b>Mission</b>	<b>Financed from international-security budget</b>	<b>Actual costs (Including 2nd and 3rd order effects)</b>	<b>Shortfall</b>
<b>Battalion, police training, Kunduz</b>	3.6	6-8	2.4-4.4 (+58-122%)
<b>LPD, Ocean Shield mission</b>	13.2	>16.2	>2.9 (>22%)
<b>Ground-based Air Defence Command, Patriot mission, Turkey</b>	36.85	>47	>10 (>27%)

Source: Own analysis on the basis of data from the Ministry of Defence and the Ministry of Foreign Affairs.

<sup>54</sup> *Evaluatie Nederlandse bijdrage aan missies en operaties 2015*, p. 42.

The financial system chosen for national deployment was developed in line with the rules in place at the time for financing the additional costs of crisis management operations. At that time, those rules did not include the costs for making troops ready for deployment. The costs for training and exercises for military aid were therefore not reimbursed.<sup>55</sup> In 2013, the Ministry of Defence agreed in a covenant with the police force and the regional security authorities that capacity would be made available for joint development, preparation and exercises.<sup>56</sup> The impact of exercises cannot be determined by the management system of the Ministry of Defence. It is not centrally registered and is not reimbursed either. The impact on the Ministry of Defence can be high. Examples of large exercises are the annual two-week-long “Wake Up” exercises. In 2012, two hundred military personnel (2,800 man-days) exercised with the 42nd Limburgse Jagers armoured battalion. In 2009, four detachments of personnel, a platoon for security, a helicopter and a logistics group were involved in the three-day exercise Floodex.<sup>57</sup>

The lump-sum payment for national deployment for military tasks or military aid is based on the additional costs. This does not take into account the costs for training for this guaranteed task. The incentive for submitting a request for military support is great due to the low cost. This is in line with the view that authorities pass on their own structural problems to the Ministry of Defence. Due to a lack of insight into the full costs, an assessment of how to deploy the limited capacity is often neglected. This is done in other countries and by other services in the disaster and crisis management branch. In these cases, the overheads and personnel costs are passed on and are invoiced at different prices according to rank. Many of the costs for national tasks are borne by the operational commands themselves. The same applies to the preparation for these tasks.

**Table: Comparison of rates for civil-military cooperation**

Examples of rates for civil-military cooperation	Rate
Daily rate for Dutch military personnel (12 hours – additional costs)	€55.00
Daily rate for Belgian military personnel (income tax deducted at source)	€152.00
Daily rate for British police officer (7.2 hours, reference date April 2012)	€518.95
Dutch ambulance journey (ordered) without kilometres travelled	€297.00

Source: HDFC, Belgium Ministry of Defence, NPCC, NZA

For international deployment, the presence of adequate sustainability is a crucial variable in almost all cases. The Netherlands armed forces do not have sufficient volume (numbers) for all capabilities in order to enable a sustainable four-stroke operational cycle. This applies, for example, to the set-up of all infantry brigades. Without a four-stroke operational cycle, the fatigue of personnel and materiel cannot be sustainably restored and it is not possible to train sufficiently to compensate for one-sided deployment. If this period lasts too long, shortfalls in materiel readiness and the gradual erosion of preparedness due to one-sided deployment both negatively impact each other. The length of deployment exemption also increases. One example of these conditions is the Patriot mission in Turkey (2014-2015). This mission lasted 24 months, whereas the regular rotation schedule of Patriot

<sup>55</sup> Eindrapport evaluatie FNIK, 16; FNIK-convenant 2010.

<sup>56</sup> Landelijk Convenant voor samenwerkingsafspraken tussen Veiligheidsregio's, Netherlands police force and Netherlands Ministry of Defence, Article 13.

<sup>57</sup> Evaluatie oefening FloodEx Field Exercise, 22, 23 en 24 september 2009.

units was six months. Due to an accumulation of problems relating to personnel and materiel readiness and preparedness this resulted in a situation in which, according to the current schedule, the Patriot units need seven years after deployment to fully reach the OR norm.

In foreign armed forces, we see similar disproportional increases in costs as a result of materiel being kept on missions too long. For the British army, (long-term) deployment in Iraq, which exceeded the agreed deployability targets, meant that the level of basic readiness was greatly inadequate and that recovery took years longer than planned.<sup>58</sup> By keeping the large NH-35 transport helicopters on mission in Iraq and not returning them for maintenance in good time, the US Marine Corps incurred repair costs per helicopter that were more than double the costs incurred by the US army, which did return their helicopters for regular maintenance. As a result, the maintenance was not only almost 200 million dollars more expensive, but the recovery was greatly delayed, the availability of the aircraft dropped to 23 percent and there were too few helicopters available for exercises.<sup>59</sup>

Secondly, in practice it is often insufficiently clear when an operational activity is 'deployment', 'training' or 'a mission'. The participation in 'Baltic Air Policing' in the Baltic States is, for example, not considered a mission, but comparable activities by the VJTF are. This distinction has significant financial consequences, as the Ministry of Defence does not receive funding from the international-security budget for NATO deployment or training, but does for a mission.

Finally, a study of the Patriot and MINUSMA missions shows that decision-makers did not have full insight into the costs of a mission during the decision-making process. Not all participants in the process had access to the same information regarding the decision. Key aspects such as maximum deployment length and sustainability were not included in the decision-making process as standard. The dependence on enablers for the preparedness of all units was barely discussed. In addition, the implications of the deployment of supporting units such as CBRN – i.e. the unavailability of the unit as a guaranteed capability for national deployment – were not part of the decision-making process. During the decision-making process, the costs connected to a mission play a minor role. The discussion about the costs of a mission is usually limited to the limited space within the international-security budget and finding funding for the gap between the actual costs and the budgeted costs. The presented estimates themselves are not discussed. The Ministry of Finance is not represented in the Military Operations Steering Group. The implications for readiness and deployment have, however, been stated in the Article 100 letters as standard for some time now.<sup>60</sup>

In summary: the impact of deployment on readiness and the readiness process is more far-reaching than was realised (and reimbursed) up to this point. In the event of a limited amount of available capabilities, the actual additional costs of extending a mission increase disproportionately. As the actual effects and costs of deployment are not fully clear, in practice there is insufficient insight into this during the decision-making process.

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<sup>58</sup> UK National Audit Office, UK Ministry of Defence: Assessing and Reporting Military Readiness (15 June 2005), 21, 22.

<sup>59</sup> Marcus Weisberger, 'Never do that again', Defense One (11 August 2016); Mike Hixenbaugh and Jason Paladino, 'Super Stallion helicopters worn out after years of war, internal military report concludes', The Virginian-Pilot (23 February 2016).

<sup>60</sup> For example: Netherlands parliamentary paper II 2015/16 27 925, no. 570. *Aanvullende artikel 100-brief Nederlandse bijdrage aan de strijd tegen ISIS* (29 January 2016).

### 3.3 Deployment of permanent military presence in the Caribbean

In the white paper 'In the Interest of the Netherlands' a permanent military presence in the Caribbean is set as a separate deployability target. The nature of the military presence is historically determined and seems for the most part to be rooted in historical agreements. Due to the low availability of materiel, the presence includes variable capabilities. Since 2014, the military presence has consisted of two rotating companies from the navy or the army, a boat platoon, a large surface vessel, a support ship and a Marechaussee brigade. The choice for these specific capabilities is primarily based on the fact that this has historically been the case. The 2014 and 2015 management reports show that the norm for the operational readiness of this presence is met.

The norm for the station ship was an M frigate prior to 2013 and after the adoption of the 2005 naval study *Marinestudie*, the stationing of an Ocean Going Patrol Vessel (OPV). An OPV can carry out the tasks that the M frigate had as a station ship in the Caribbean at much lower costs.<sup>61</sup> In practice, the number of sailing days in the Caribbean are realised, but other (larger) surface vessels are deployed for this purpose. This leads to higher operating costs and compromises the readiness of larger surface vessels such as frigates.

Helicopter hours are a capability in short supply. Due to shortages, the norm for helicopter hours in the Caribbean was not reached between 2011 and 2013. The justification for the norm of 290 flight hours with an on-board helicopter is not clear, however. If the norm figures used by the Defence Helicopter Command for the NH90 were applied, then the maximum number of allocated flight hours would be 170.<sup>62</sup> If the regular DHC norm were applied, the norm would have been met between 2011 and 2013, and in three years almost twice as many flight hours would have been flown than the norm. Since 2012, the required helicopter flight hours were no longer flown with an on-board helicopter from the Caribbean presence, but by a borrowed helicopter or by stationing a ground helicopter on Curaçao. As the station ship mainly operates outside territorial waters and spends 40 percent of its deployment period off the coast of the Leeward Antilles, this compromises the effective flight-hours. In addition, there is more wear and tear, and maintenance is more expensive than it would be if an organic, maritime helicopter were deployed.<sup>63</sup>

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<sup>61</sup> *De Marinestudie 2005*, p. 5 et seq; Netherlands parliamentary paper II 2016/17, 31 516 no. 17, *Beleidsdoorlichting Marinestudie 2005*. Appendix 3: ADR, Sub-question 3, p. 11.

<sup>62</sup> *Convenant CZSK en KWCARIB*, p. 16.

<sup>63</sup> *Kustwacht voor het Koninkrijk der Nederlanden in het Caribisch Gebied, Jaarverslagen 2011-2015*, more specifically 2015, p. 14.



## 4 Findings

Section 2 explained the reductions and changes the armed forces have been subjected to over the last 25 years. These have had a great impact on the readiness and readiness process of the armed forces. This section presents the findings of the working group with regard to the readiness process of the armed forces. In order to arrive at these, the working group looked in depth at four different capabilities: the Landing Platform Dock, the C-130 transport aircraft, an airmobile infantry battalion and a mechanised infantry battalion. The findings for these capabilities are largely representative for the readiness process across the whole armed forces. This analysis provides insight into the current situation.

The study reveals a number of strong points of the readiness process of the Netherlands armed forces, such as international cooperation, initiatives to better map out cost structures, and dedicated personnel. In addition, findings were made that explain the loss of effectiveness and efficiency in the readiness process. These findings are clustered in eight themes in the following paragraphs.



Photographs: Netherlands Ministry of Defence.

### 4.1 Preconditions for developing a 'cost-to-readiness' model

The working group was tasked with providing insight into the costs of readiness, and to make proposals for increasing the effectiveness and efficiency of the readiness process. In order to do so, the 'levers' of the readiness process need to be determined. The working group made its aim the identification of the conditions that are necessary in order to be able to design a comprehensive and dynamic model that provides insight into the relationship between costs and readiness. Key to such a model is the 'cost-to-readiness ratio', or the relationship between the costs of readiness (efficiency) and the extent/quality of readiness (effectiveness) and the speed at which readiness should be achieved. Effectiveness and efficiency are, after all, two sides of the same coin, and cannot be considered independently of one another.

In order to arrive at a cost-to-readiness model, two large and stable data sets are needed: financial data (input) and measurement data on the operational readiness (output). The Ministry of Defence has sufficient financial data of a high quality (i.e. detailed and sufficiently attributable) for developing such a model. The Ministry of Defence does not, however, have sufficient stable and detailed data on the operational output (readiness) needed to develop a dynamic model. During the study an attempt was made to draw up a function of costs and readiness for various capabilities, but the data for operational readiness proved to be too variable and insufficiently clear to develop a model of this type on its basis. It is possible to determine the costs per capability or the costs of some types of deployability. Incidentally, the Netherlands armed forces are not unique in this regard. The study did not find that other countries had a well-functioning cost-to-readiness model. Further research into this is necessary.

## Examples of variable readiness data

**LPD:** Between 2011 and 2014, the norms according to which readiness was reported changed annually. At that point, the measurement system of the *Marine HAKOG* (the naval manual for quantifying operational readiness) changed overnight from a report based on a reference point to a report on the average readiness of the last three months. This made it more difficult to signal trends. The readiness report of the vessel often did not indicate the extent to which the vessel met the OR norm. Due to the shortage of means with regard to personnel, materiel and training, the readiness report reflected, in part through the commander's professional judgement, the mission-specific readiness. This is more of a prediction of the extent to which the vessel is considered able to carry out the planned mission. In order to successfully carry out missions such as anti-piracy missions, not all weapon systems need to be operational, yet this is the case for the OR norm.

**C-130:** The MR norm for the C-130s was subject to change

Year	2011	2013	2015
MR norm	1 of 2 aircraft	3 of 4 aircraft	2 of 4 aircraft
PR norm	7 crews	4 crews	6 crews

In order to acquire better measurement data, existing systems and processes could be built upon. The working group made three specific findings regarding the preconditions for successfully measuring readiness.

Firstly, for a cost-to-readiness model it is necessary to establish detailed readiness norms. These norms need to be stable for a longer period in order to ensure the value of the measurement data. The study showed that, in line with political decisions and corresponding financial frameworks, the readiness norms have been significantly adjusted over the last few years. The definition of what is meant by 'operationally ready' has, for example, been changed many times. Furthermore, the reported readiness did not correlate with the cost level (which incidentally remained stable in this period). As a result, it proved impossible to develop a valid model that provides sufficient insight into the correlation between readiness and the costs.

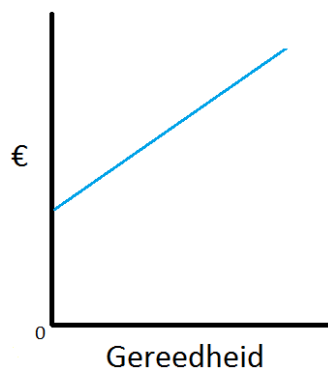
In order to develop a cost-to-readiness model, it would be helpful if readiness and the readiness norms were stable for a longer period of time. This means measuring readiness at a lower level (e.g. sub-units or sub-capabilities), creating nuances in the qualification of readiness and consistently and consequently applying this system throughout the armed forces. The current readiness model is designed on the basis of applying binary values to readiness (units are either 'ready' or 'not ready'). In practice, this binary distinction is not applied and more nuanced qualifications are used (e.g. 'mission-specific readiness' or 'operational with limitations').

Thirdly, in order to be able to realistically measure readiness, a number of critical performance indicators need to be determined in advance, including knock-out criteria (for example the availability and deployability of the main weapon system). The current model leaves a lot of room for interpretation with regard to performance. The method for measuring readiness does not provide a sufficiently correct reflection of reality. Furthermore, the current criteria and measurement values for readiness are not always consistent with the commander's professional judgement. The commander plays an important role in anticipating the operational readiness of his unit. Values for matters such as morale, leadership, courage and daring, which are decisive for the success of a unit

on deployment, cannot be provided by information systems, but call for the professional judgement of the commander.

The graph below shows a simplified view of a dynamic cost-to-readiness model that makes it possible to make a prediction within a realistic bandwidth regarding the extent of readiness (quality, quantity and deployment period) that can be realised for a certain level of expenditure.

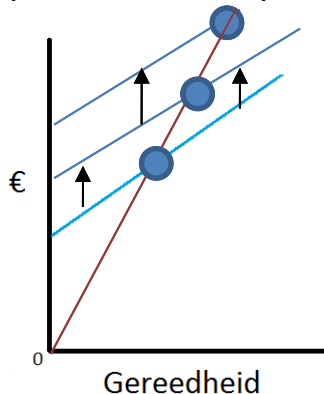
**Graph: Illustration of a cost-to-readiness function**



'Second best' is a static model built up from 'cost points', where the costs are determined for a capability, unit or mission for a specific realised readiness level. This is retrospective and offers, in addition to historical data, limited predictive value with regard to the costs of, for example, a higher level of readiness, or a level of readiness than can be achieved more quickly. Drawing a line through a number of points does not result in a curve. It is likely that in light of the changes to operational readiness the curve has also shifted and

that the points each belong to a different curve.

**Graph: Illustration of cost points on a shifting cost-to-readiness function**



In order to arrive at a functional dynamic cost-to-readiness model, different methods are required for standardising, measuring and reporting on readiness. Although implementing a dynamic model of this kind would take a lot of time and effort, it is the only way to gain insight into readiness costs and make them transparent. It is the only way to provide sufficiently quantitative data on the costs of readiness, including the second- and third-order effects of deployment on readiness, such that this data can play a role in the decision-making process. The expectation is that it would take approximately three years before the measurement and regulation system is in place and functioning adequately.

## Attempts to establish cost-readiness models in Denmark, Great Britain and the US

All Western armed forces struggle with measuring and providing insight into readiness and the readiness process.<sup>64</sup> The working group did not come across a single fully functioning cost-to-readiness model. In a number of countries there were building blocks in place that could be used for designing a model of this kind.



**In 2005, Denmark introduced an output-based budgeting system consisting of three phases:** 1. Identifying the costs associated with readiness and determining the parameters for a readiness methodology (cost structure, readiness levels with a consistent set of outputs (CPIs) corresponding to them, determining the extent and quality of what is understood by 'capability'); 2. Designing an output-based budgeting system for five specific capabilities (armoured infantry, supporting unit, supporting ship, fighter aircraft and a helicopter unit); 3. Institutionalising and scaling-up. Replicating the experiences from phase 2 for other capabilities. The outcomes of this model/process were used to establish 'force packages' with corresponding readiness levels. These proposals were subsequently offered to Parliament with a request for funding. The Danish model was based on creating a transparent and objective factual basis for all players in the inter-ministerial field, which meant the political decision-making process was also made easier. The working group was informed that this model was not implemented due to its complexity.



In the UK, the use of the existing METS system (to measure man-power, equipment, training and support) was increased. Intuitive monthly dashboards indicate the METS category using a traffic-light scoring system per 'force element'. A commander's professional judgement was only provided for preparedness, all other data was automatically generated.



**The US implemented the 'Affordable Readiness Model' (ARM) for the F-35 programme.** The ARM focuses on identifying readiness data, modelling the relationship between costs and readiness and identifying the 'cost drivers' and 'key drivers' of loss of readiness. Contracts with suppliers were performance-based, supported with an agreement regarding the level of readiness for a fixed price.

## 4.2 Stumbling blocks and interdependencies in the readiness process

The readiness process consists of three aspects: personnel readiness, materiel readiness and preparedness. The three components of readiness each face stumbling blocks that hinder the process of working towards the norm. In addition, there is a web of interdependencies which means that limitations in one sub-domain impact the other sub-domain. A lack of technical personnel, for example, has an effect on the availability/unavailability of materiel, which in turn impacts the preparedness.

In an attempt to compensate for the lack of qualified (technical, specialist, maintenance) personnel, personnel change position quickly and often. Units have to provide personnel to other units that are to be deployed, for example. Across the armed forces, regular changes of personnel are insufficiently coordinated with the pre-deployment preparation periods and readiness cycles of units. A lot of personnel changes take place during the pre-deployment preparation period, as a result of which the

<sup>64</sup> Richard K. Betts, Military readiness. Concepts, choices, consequences (Brookings Institution 1995).

effectiveness and sustainability of the training falls. Prepared personnel (in key positions) are sometimes also changed at the time that the unit is operationally ready. The operational readiness drops as a result of these personnel changes.

#### Examples of problems relating to personnel

**C-130:** Due to vacancies for over a quarter of the pilots, instructors routinely fly international transport for the EATC international transport pool, and do not train pilots during this time. As a result, the preparedness remains below the norm.

**LPD:** There is a lack of specialist personnel, causing backlog. For example, there is only one weapon expert for the rapid-firing cannon (Goalkeeper) of the LPD. Whenever there is a malfunction on a mission, this expert is flown in; meaning regular maintenance is not performed and is delayed.

**LPD/Infantry battalions:** Due to a shortage of qualified personnel, personnel changes are driven by shortages of units that are on a mission at that time, and these changes are not in sync with the pre-deployment preparation periods and the readiness periods of the vessels/battalions. Once a vessel/battalion is organically ready, it is not protected from personnel changes. As a result, a fully prepared ship/battalion can quickly lose its personnel and drop in the level of preparedness. This particularly applies to technical and other specialists and NCOs. At one of the infantry battalions included in this study, this meant that 70 percent of the personnel at the beginning of the readiness cycle had been changed before the end of the process. On the LPD over a third of the crew changed role or vessel during the readiness cycle.

The materiel readiness is impacted on when the capacity for logistics and maintenance is insufficiently synchronised with the pre-deployment exercise and preparation schedules, for example if a shipyard has insufficient maintenance capacity available in the short term (in the Netherlands). The level of materiel readiness is therefore often below the norm. The availability of spare parts is not optimal and there is room for improvement for a more effective approach to the maintenance cycles. Turnaround times are too long as a result. All of the above contributes to the unavailability of materiel. The lack of technical and specialist personnel mentioned earlier is critical in this regard.

#### Examples of problems relating to materiel

**LPDs:** As each LPD is unique to the fleet, major maintenance must be re-learned every four years. Scheduling maintenance is difficult as a result. Major maintenance of the 2 LPDs takes 5 weeks, or 2.5 months with delays due to shortages of spare parts, among other things. As a result, the pre-deployment preparation period was delayed and the LPDs were operationally ready much later than planned. Due to the 5-week delay for that one vessel, the preparedness dropped by 15 percent.

**C-130:** The availability of C130s is inadequate due to a shortage of spare parts. If this could be reduced by half, the number of flight hours could significantly increase.

**Infantry battalions:** Essential materiel such as night-vision equipment and radios are not available for training as they are being used on missions. Due to the limited availability of a variety of armoured vehicles, what emerged was in fact a new pool of vehicles shared by the different infantry battalions, as a result of which it is not possible to exercise full units in large alliances with the necessary vehicles.

Due to the materiel shortages of communication equipment, tactical vehicles and night-vision equipment, units are dependent on the availability of these in a central pool, or have to borrow materiel from each other. The same applies to enablers in short supply, such as communication units, engineering units, and logistic and helicopter capabilities. As the deployed units are prioritised above exercising units with regard to the allocation of enablers, this compromises the preparedness of the units in training. Finally, the availability of instrument-controlled training areas in short supply and the amount of time in advance such facilities must be booked are not in balance with a readiness process that is dynamic and largely based on short cycles.

### **Technology and innovation**

The readiness process can also be improved by the deployment of technology and innovations. In the broadest sense, three categories can be identified for technology and innovation: (1) technological innovations which the Ministry of Defence already uses, albeit to a limited extent, whereby upscaling could lead to an improvement in readiness; (2) promising technological innovations that have been further developed and are available, so can be deployed in the short term but are not yet used by the Ministry of Defence. In these cases, experience with regard to use and implementation will largely have to be gained via pilot projects; (3) promising technology in development that could lead to readiness improvements in the mid to long term, but is not immediately available because it has not yet been sufficiently developed. In these cases, technological explorations and concept development and experimentation are needed to establish the usability and feasibility of the new technology for the Ministry of Defence. Technological support in the form of modelling capacity can be used for cost-to-readiness models, scenario-based planning and sustainable force generation, in order to gain insight/earlier insight into stumbling blocks for the realisation of deployability targets and the composition of the armed forces. The further development of models for life-cycle costing is also useful in this regard. At the request of the working group, the Netherlands Organization for Applied Scientific Research identified a range of technological innovations that have been developed enough and are available, with a view to strengthening all aspects (PR, MR, preparedness) of the readiness process (see appendix). For most of the innovations, the greatest added value is created when they are implemented and applied across the armed forces.

Technology and innovations can be applied in several different ways. One possibility is the continuous monitoring of the remaining performance of vehicle frames. Possible effects of this deployment are the earlier detection of the expected failure (of platforms or systems), which contributes to better mission planning, reduced maintenance costs and improved self-reliance of military units. Simulation is also a possibility. 'Live virtual and constructive' simulation improves the flexibility and effectiveness of exercises, because not all weapon systems need to be present at an exercise at once. Sometimes systems are not available due to maintenance or deployment, sometimes they are not deployable due to safety, environmental or noise restrictions (e.g. a ban on low-flying aircraft). LVC makes exercises, training and mission preparation more realistic and increases the educational value. Role play in particular has a high added value due to the possibility of creating a realistic social and cultural context. The introduction of individual monitoring systems (biometrics) improves insight into the physiological and medical state of military personnel and contributes to improved medical care, both during deployment and during after-care. It also reduces the drop-out rate during training.

### 4.3 Lack of and insufficient availability of enablers

The lack of enablers has already been identified by the Ministry of Defence and the Netherlands Court of Audit and has already been reported to Parliament. These are vital operational capabilities for supporting units and operations, such as helicopters, logistics, communication means and fire support. The availability of such enablers is necessary for both operational deployment and training. Being able to work with integrated enablers in a unit or operational concept is a crucial skill and is at the very core of readiness and the readiness process. Testing this ability to work with enablers is one of the primary objectives of, for example, certification exercises or exercises in larger (organic) alliances. The lack or shortage of enablers results in a substantial reduction in the quality of exercises and therefore the operational readiness.

#### Example of insufficient availability of enablers: means of communication

The availability of means of communication (CIS capability) is low, partly due to high deployment pressure, and partly due to a shortage of personnel and low availability of materiel. In order to be able to nonetheless support large army exercises, communication trucks are taken out of their maintenance cycle and transported to the exercise terrain on low-bed trucks. The study also revealed that due to the low availability of CIS means, means of communication are sometimes rented from the private sector and some units are forced to use their personal mobile phones in order to communicate on exercises.

This shortage of enablers is a result of the decision to spare military capabilities from cutbacks by reducing enablers instead. A shortage of this kind cannot be compensated or accommodated for by greater flexibility or efficiency of exercises, only by improved availability of enablers. The current amounts of, in particular, centralised units and enablers are too low to be able to sufficiently support the current demand for operational units.

The working group finds that the shortage of enablers is due, on the one hand, to the non-deployment level of the enablers being too high and, on the other hand, the fact that the armed forces do not have enough enablers (numbers). The lack of enablers is a critical stumbling block in the readiness process. Allies are facing exactly the same challenges regarding enablers and can therefore not provide them either.

### 4.4 Replacement investments financing requirement

Sustainably deployable armed forces cannot be achieved without sufficient replacement investments being made. Over the last few years, several investment decisions have been postponed, partly due to a decreasing budget and a lack of procurement capacity. The result of this is that materiel that has reached the end of its maximum operational and/or technical life (known as 'end life of type') cannot be replaced, and must therefore stay in service, which often means limited availability at high costs. A concrete example of this is the replacement of trucks. As the Ministry of Defence project to replace operational wheeled vehicles, *Defensie Vervanging Operationele Wielvoertuigen*, has been postponed several times, the current 4 and 5 ton trucks reached the end of their life several years ago. Recently, corrosion problems were detected that were so severe that the entire fleet of trucks had to be taken out of service for inspection for safety reasons. The corrosion of some vehicles was so extreme that they may no longer be used.

In addition to a decreasing budget and procurement capacity problems, underspending is also a structural problem for the Ministry of Defence. In 2015, the Ministry of Defence commissioned an investigation into the causes of the underspending with regard to Ministry of Defence investments. The conclusion of this investigation was that these were caused by a lack of manageability of the project portfolio, insufficient connection of the planning process with geopolitical and societal changes, and an overly bureaucratic investment process. As a result, the Ministry of Defence was insufficiently able to complete the investment projects in time, which resulted in underspending.<sup>65</sup> The Minister of Defence concluded that partly due to this investigation, steps have been taken in the right direction, but that the improvements are slow to be implemented and further steps were needed.<sup>66</sup> Since then, the Ministry of Defence has worked hard on further improving the investment capacity. Various measures were taken to this end, including improving the spare-parts logistics chain.<sup>67</sup>

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<sup>65</sup> Netherlands parliamentary paper II, 2015/16 34 400 X, no. 39. Appendix. Policy Research Corporation, *Eindrapport Onderrealisatie investeringen Onderzoek voorzien-in* (23 October 2015), p.p. 25-27.

<sup>66</sup> Netherlands parliamentary paper II, 2015/16 34 400 X, no. 39. Letter from the Netherlands Minister of Defence *Resultaten van het onderzoek naar de oorzaken van de onderrealisatie in de 'voorzien in'-keten van Defensie* (28 October 2015).

<sup>67</sup> Netherlands parliamentary paper II, 2015/16 34 300 X, no. 115. Letter from the Netherlands Minister of Defence *Verbeteren prestaties 'voorzien-in'-keten* (21 June 2016).



**Table: Ministry of Defence investments budget, actual expenditure and difference, 2010-2016, in € x 1,000**

	2009	2010	2011	2012	2013	2014	2015	2016
<b>Budget</b>	1,663,574	1,716,280	1,464,202	1,138,770	1,173,362	1,193,654	1,308,438	1,446,203
<b>Actual expenditure</b>	1,606,977	1,413,456	1,294,349	1,195,631	1,019,656	1,065,480	1,101,504	1,304,491
<b>Difference</b>	-56,597	-302,824	-169,853	+56,861	-153,706	-128,174	-206,934	-141,712

Source: *Jaarverslagen Defensie 2010-2016* and *IBOS*.

Since 2013, budget not used for investments can be carried over in full to subsequent years. Since 2015, the use of the investment budget for regular operational costs has not been permitted. Due to the postponement of replacement investments, the number of systems that have reached the end of their operational or technical life has increased over the last few years. In order to re-establish the readiness of the armed forces, this backlog must be caught up on. This means that over the next few years a variety of major systems will have to be replaced within a limited time frame. This is a financial challenge, which is exacerbated by the risk of currency fluctuations and price increases on the market for defence products. Statistics Netherlands is currently investigating whether a defence-specific index would be a possibility. Replacement backlogs prevent readiness stumbling blocks from being solved. In 2015, the actual expenditure under the budget for obligations was higher than budgeted for, partly due to the replacement and modernisation of capabilities.<sup>68</sup>

#### 4.5 Insufficient scale and a wide range of capabilities

The working group concludes that both the effectiveness and the efficiency of the readiness process are hindered by a relatively large set of small numbers of non-standardised materiel and capabilities. These can only be scaled up to a limited extent due to the relatively low volume and the limited support. Having too small a number of lots of different (potentially international) non-standardised capabilities is relatively expensive for the armed forces. As a result, the Ministry of Defence can gain few benefits of scale. Furthermore, it does not have the necessary operational redundancy. If the decision were to be taken to expand capabilities, such benefits of scale should be sought through standardisation.

#### Examples of the limited scale of the capabilities

**LPDs:** Both LPDs are unique. The second vessel was procured nine years after the first and has different capabilities, technology and propulsion. As a result, the maintenance costs and running costs are higher than would be the case if the two vessels were identical.

**C-130:** Due to the limited scale of four aircraft, a failure or operational defect on one aircraft has great impact on the availability and readiness of the entire transport fleet. The limited scale also means there is less bargaining power to influence market prices for maintenance. As the Dutch C-130 has a unique cockpit configuration, this limits the possibilities for international cooperation, training and exchange. It also means that existing simulators in partner countries can only be used to a limited extent. This configuration also increases the cost of maintenance and spare parts.

<sup>68</sup> *Jaarverslag Defensie 2015*, p. 60.

**Patriots:** Due to the limited number of ‘fire units’, the Netherlands has too little sustainability to deploy this weapon system for the long-term.

**Armoured infantry:** The low availability of armoured vehicles (CV90) means the infantry battalions actually form pools of vehicles that are available in order to compensate for the shortages as effectively as possible. This has a negative impact on the effectiveness of exercises and also means it is not possible to exercise in large alliances.

With a view to deploying little/too little materiel as efficiently as possible, a lot of materiel is pooled, in order to serve the units as well as possible with the materiel available. The limited scale of materiel means there is only limited redundancy to compensate for materiel defects or failures. As this pooled materiel is needed for deployment and is also needed for preparedness, shortages in the pooling system are difficult to compensate for in the readiness process, which is vulnerable as a result. There is no formal mechanism in place to manage the downsides of the pooling system. Due to the high number of capabilities of limited volume, benefits of scale – from procurement to maintenance and interchangeability – are not gained.

#### **4.6 Standardising, measuring and reporting on readiness**

The working group finds that improvements can be made with regard to a clear, transparent and well-reasoned standardisation of the numbers of units and their corresponding level of readiness. To this end, standardisation is particularly needed for deployability target 1. It is both possible and desirable to arrive at clear, transparent standardisation on the basis of existing units if a much tighter ‘cascade’ of norms is applied, starting with a shared vision of international security in the policy papers of the Ministry of Foreign Affairs. This should be expressed in an ambition level for the armed forces, with the cascade then ending in the target matrices of the operational commands.

As far as measuring and reporting on readiness is concerned, the working group concludes that in its current form the reporting system gives insufficient insight into the actual operational readiness. Operational readiness is presented as the sum of personnel readiness, materiel readiness and preparedness. In practice, these elements cannot be simply added together. These three elements are large independent units that have qualitative knock-out criteria built in with regard to operational readiness. In the current system, these knock-out criteria are not included in the quantitative readiness report.

#### **Examples of the current reporting system**

**LPDs:** Until 2014 no OR norm had been established. Instead this was defined as the expected availability of the capability for the years to come. The operational commander’s professional judgement primarily focuses on the feasibility (with limitations) of the coming deployment and not on the OR norm. The quantitative measurement of PR, MR and preparedness are weighted averages of the availability of the staffing, the availability of all systems and the percentage of completed exercises. This does not include any knock-out criteria.

**C-130:** The Netherlands guarantee for air transport in the international pool (EATC) was not included in the CHOD’s Instructions for Operational Readiness until 2017. As a result, not all tasks for the OR norm were included and clear prioritisation between deployment and European transport tasks is

missing.

The quantitative indicators for PR, MR and preparedness are insufficiently detailed. As a result, this can give a distorted view of the actual readiness for the three components. Personnel readiness, for example, is quantitatively reported on the basis of staffing. Some capabilities, however, are dependent on key positions in order to function effectively. This is often included in the explanatory notes of the report. When reporting quantitatively on staffing level, the lack of key figures such as these – certainly for capabilities heavily reliant on personnel – is less visible. The same applies to materiel readiness. Materiel readiness reports on the quantitative availability of all the materiel of a capability. As a result, low availability of weapon systems that are unique and crucial for operations is not visible for capabilities with a large amount and a very wide range of materiel. This mechanism can be seen in all OPCOs. A significant amount of these underlying causes becomes lost when management information is transferred from the OPCOs to the central level, as it is converted into binary traffic lights, which in their current form do not leave much space for these underlying explanatory factors to be stated.

These factors are, however, explained in great detail in the underlying reports. One of the mechanisms that compensates for this in part is the commander's professional judgement, which is a qualitative assessment of his unit that is added to the report. This professional judgement serves as clarification of the 3 indicators for which the readiness status is reported. In this way, greater insight can be given into the qualitative status of the capability. Low availability of crucial weapon systems or lack of staffing for key positions, for example, are made clear here. The commander assesses, for example, the readiness status of the unit on the basis of rational qualitative knock-out criteria, but these are not explicit in the current system. Values for matters such as morale, leadership, courage and daring, which are decisive for the success of a unit on deployment, cannot be provided by information systems, but call for the professional judgement of the commander. Partly for this reason, the OPCOs attach a lot of importance to the commander's professional judgement, which ultimately answers the question of whether the unit is ready for the ordered or organic task.

As a result of pressure on personnel and materiel and the focus on deployment, however, the commander's professional judgement has also been used not only to report on whether the unit meets the OR norm, but to assess the extent to which the unit is ready for a specific mission. As a result, the readiness report is considered more of a prediction of the extent to which the planned deployment is considered feasible, than a factual report on the organic readiness at that point in time.

Each OPCO has its own readiness process and tracks progress in its own systems. For the central report of operational readiness, the information from these OPCO systems is interpreted. In order to do so, information is brought together from different systems. Not all systems (in particular SAP) currently provide the required information in sufficient detail, and not all systems are set up as reporting systems. This is a work in progress.

#### 4.7 Inter-ministerial cooperation and coordination

The working group finds that there is insufficient clarity and agreement between the involved ministries regarding the qualitative and quantitative link between targets, budgets and output, such as the readiness of the armed forces. While policy documents do link capabilities with tasks, the reason for the amounts stated in not entirely transparent. The current method of translating the security situation and government targets into operational readiness requirements, output and budget could be improved by making it more specific.

Regular coordination between the Ministry of Defence, the Ministry of Foreign Affairs, the Ministry of Finance, the Ministry of Security and Justice, the Ministry of Interior Affairs and Kingdom Relations, and the Ministry of General Affairs is an essential precondition for improving insight into the readiness and deployability of the armed forces. This process can also be facilitated by creating shared understanding and trust on the basis of transparent and objective facts. This means that the Ministry of Defence provides its most important partners with insight into the methodology for standardising, measuring and reporting on readiness (including the cost-to-readiness model) and makes the relevant measurement data available to them.

Making transparent how readiness supply and demand are matched and at what cost would also contribute to providing insight and clarity to the ministries involved. This could be achieved by means of multi-year agreements laid down in a strategic readiness matrix with corresponding balanced funding/a multi-year framework in which concrete targets are established for the readiness of units. Readiness agreements of this kind would offer the Ministry of Finance insight into the efficiency and effectiveness of readiness. In this way the Ministry of Interior and Kingdom Relations offers insight into the available space of committed and non-committed units. These agreements also provide the Ministry Defence with clarity regarding the multi-year ambition and a corresponding multi-year budget.

The working group considers regular inter-ministerial coordination regarding the nature, scope and corresponding ambition of the armed forces to be of strategic importance. There is currently no permanent consultation structure or cycle in place. The nature, scope and corresponding ambition of the armed forces are, however, such a fundamental political issue that they go beyond the Ministry of Defence. A comprehensive approach is missing. The Ministry of Defence is part of a broad and varied administrative, societal and international and national ecosystem.<sup>69</sup> For the facilitation of the political process in response to these problems, inter-ministerial cooperation and inter-ministerial support is needed. Today, in the current security situation, readiness and deployment are intrinsically linked.

The working group finds that to achieve better readiness, greater inter-ministerial cooperation and support is needed than is currently the case. Shared inter-ministerial understanding of the nature, scope and corresponding ambition of the armed forces can be created by working through a periodic inter-ministerial vision process (the British SDSR model could be used as inspiration). It would be advisable to start with the adopted inter-ministerial vision documents that are already available. The aim is to create a shared perspective for at least the coming four years. The periodic security and

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<sup>69</sup> Netherlands Ministry of Defence, *Houvast in een onzekere wereld. Lijnen van ontwikkeling in het meerjarig perspectief voor een duurzaam gereede en snel inzetbare krijgsmacht* (14 February 2017) 15.

defence review should consist of an evaluation of the security situation and set down the international security strategy. It should include a scenario analysis of possible deployment scenarios for the armed forces and it should determine the Netherlands ambition level and establish and describe the expected output of the armed forces. The review forms the basis for determining the nature and scope of the armed forces and for establishing the strategic readiness matrices, including the necessary budget.

#### Inter-ministerial cooperation models from Denmark, the UK and the US



The Danish process includes two parallel processes, each of which is completed every 4-5 years: 1. The Ministry of Defence and the Ministry of Finance prepare the government position for the politicians on the basis of the 'output-based budget model' and the efficiency targets set; 2. The politicians draw up a framework agreement – the multi-year defence agreements<sup>70</sup> – in which it is established which capabilities are necessary, at what cost, and how many personnel can be recruited. This also includes a debate about the extent of the 'opex' (running costs) and 'capex' (investments). Part of this framework agreement is the adoption of the budget for the full term of government. The politicians evaluate the framework agreement every quarter and discuss the results achieved. The effect of this approach is stable political support. This benefits the Ministry of Defence with regard to planning (clarity over several years). In addition, a constructive relationship with the Ministry of Finance develops in the discussion about the actual expenditure and the search for and development of a solution that has political support in the case of shortcomings.



**The British model is based on the 'Strategic Defence and Security Review' (SDSR), a five-yearly process that is led by the Cabinet Office and that involves not only the Ministry of Defence, but also the departments responsible for foreign affairs, international development, home affairs, security, justice, and finance.** In 2010, a national security council was set up, partly in order to lead the establishment and implementation of the SDSR. The SDSR is characterised by a holistic approach, incorporating matters of defence and security for the coming five years. The SDSR is decisive for the 'force levels' of the armed forces, and for the investments in the armed forces for the coming ten years. Part of this process is detailing a variety of scenarios, for which the extent of involvement and the extent of the effort by the Ministry of Defence is varied. An important 'lesson learned' is to involve the enablers in the SDSR, because otherwise there is a risk of the armed forces becoming 'hollow'. The UK uses a 'capability shortfall register' to inform the government of expected limitations and of the impact on readiness of deployment and the expected costs and time period needed to mitigate this impact. The SDSR is the basis for a ten-year investment programme for the armed forces.



**The US has the 'Quadrennial Defense Review' (QDR) process, as part of which strategic objectives and potential military threats are evaluated.** The QDR is an essential process for the structuring of the armed forces, for modernisation plans and for the Department of Defense budget. It enables the armed forces to carry out its tasks and missions as described in the National Security Strategy. The Department of Defense adopts an armed forces

<sup>70</sup> Margriet Drent and Minke Meijnders, Multi-year Defence Agreements. A Model for Modern Defence? (Clingendael, September 2015).

strategy on the basis of scenarios for possible deployment and commitments. These scenarios are modelled according to risk level, and the likelihood of several crises and/or simultaneous deployment. The results of the scenario analysis are subsequently related to specific capabilities (amounts, types and enablers).

The examples above show that three countries have developed their own specific models and processes for the same purpose and effect. It is noteworthy that they all have in common the fact that they have stabilised the defence budget and have created a shared understanding for the (political) course to be followed, the deployment priorities and the type of armed forces that are needed for that. On the basis of these basic principles, the Ministry of Defence can implement investment programmes and determine the structure and composition of the armed forces. Experience has shown that a four- or five-year cycle is feasible for such an exercise.

## **Part 3: Appendices**

### **Appendix 1: Composition of the working group**

#### **Chairman**

Dirk Jan van den Berg, Chair of the Board of Directors, Sanquin Bloedvoorziening

#### **Members**

Michael Beltman, Netherlands Ministry of Defence

Bas Bijlsma, Netherlands Ministry of Foreign Affairs (substitute member)

Maarten Boef, Netherlands Ministry of Foreign Affairs

Henk Geveke, Director of Netherlands Organization for Applied Scientific Research, Defence and Security (independent expert)

Stan Kaatee, Netherlands Ministry of General Affairs (until 1 February 2017)

Niels Kastelein, Netherlands Ministry of Finance

Gijs van Keulen, Netherlands Ministry of Defence

Pieter van Marken, Netherlands Ministry of Finance

Peter Reesink, Netherlands Ministry of Defence (substitute member)

Philip Strik, Netherlands Ministry of General Affairs (substitute member)

Gerbe Verhaaf, Netherlands Ministry of Defence (additional member)

Arthur van Vliet, Netherlands Ministry of Defence (substitute member)

David van Weel, Netherlands Ministry of General Affairs (from 1 February 2017)

General Hans Wehren (ret'd), Royal Netherlands Air Force (independent expert)

#### **Working group secretariat**

Taco Fens, Netherlands Ministry of Finance

Marcus Houben, Netherlands Ministry of Defence

Sjoerd Keulen, Netherlands Ministry of Finance

Sieb Wiersma, Netherlands Ministry of Defence

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## **Appendix 3: List of interviewees**

### **List of interviewees for the Inter-ministerial policy study on readiness (without titles)**

- Georges van Aalst, NMR SHAPE NATO
- Robert Bauer, Netherlands Deputy Chief of Defence
- Ben Bekkering, Netherlands Head of Permanent Military Representation
- Jan Broeks, Director General of the NATO International Military Staff
- Dirk Jan Broeks, DOPS Chief of Staff, Netherlands Ministry of Defence
- Huub Dijstelbloem, Netherlands Scientific Council for Government Policy
- Ernst Dobbenberg, Netherlands Military Representative at NATO
- Govert van Gorcum, HDFC Policy Advisor, Netherlands Ministry of Defence
- Sandra Keijzer, Head of Organisational Readiness Support, Directorate of Organisational Readiness, Netherlands Ministry of Defence
- Gijs van Keulen, Directorate of Operational Readiness, Netherlands Ministry of Defence
- Timo Koster, NATO Defence Plans & Capability Director
- Marjanne de Kwaasteniet, Permanent Representative of the Netherlands to NATO
- Marja Kwast, Secretary to the Committee on Peace and Security and the Advisory Council on International Affairs
- Roger van Laak, Head of Crisis Management Operations and Peace Keeping Operations Division
- Richard Laurijssen, Deputy Director for Weapon Systems, DMO, Netherlands Ministry of Defence
- Tom Middendorp, Netherlands Chief of Defence
- Jeanette Morang, Head of Operational Readiness, Directorate of Operational Readiness
- Richard Oppelaar, Director of Operational Readiness, Netherlands Ministry of Defence
- Carl Peersman, Head of Defense Policy and Planning Unit, Netherlands Representative at NATO
- Corné Rijken, Head of J8 Division (Finance), Netherlands Ministry of Defence
- Hans van Santen, Principal Directorate of Policy (HDB), Netherlands Ministry of Defence
- Pier Schipmølder, Deputy Commander of Helicopter Command, Netherlands Ministry of Defence
- Detlev Simons, Head of Policy Development Division, Support Command, Netherlands Ministry of Defence
- Marcel Urlings, member of Advisory Council on International Affairs and the Committee on Peace and Security
- Gerbe Verhaaf, Director of Operational Readiness, Netherlands Ministry of Defence
- Ricardo van Vugt, Policy advisor at Principal Directorate of Finance and Control, Ministry of Defence
- Myrthe Wajer, Ministry of Foreign Affairs, NATO
- Bas Wels, Ministry of Foreign Affairs, NATO
- Bart Zonneberg, CIS Battalion Commander, Netherlands Ministry of Defence

Plus 45 interviewees for the case studies at RNLA, RNLN and RNLAf.

### **Presentations for the working group**

- David Chinn, Leader of Global Government Defence, McKinsey & Company
- UK House of Commons, Defence Committee
- Bjarne Corydon, former Minister of Finance of Denmark
- Ministry of Defence, United Kingdom
- Bernard Gray, former Chief of Defence Material
- Royal United Services Institute: RUSI

- HM Treasury, United Kingdom
- Gerbe Verhaaf, Director of Operational Readiness, Netherlands Ministry of Defence
- Mario Verbeek, Commander of Woensdrecht Logistics Centre, Netherlands Ministry of Defence

## Appendix 4: Remit

### 1. Core/aim of the study

To gain a good picture of the expenditure on operational readiness and the possibilities/levers for improving operational readiness in terms of efficiency and effectiveness. In addition, to investigate how the link between the readiness process and the deployability targets can be optimised.

### 2. Further details

#### *Introduction*

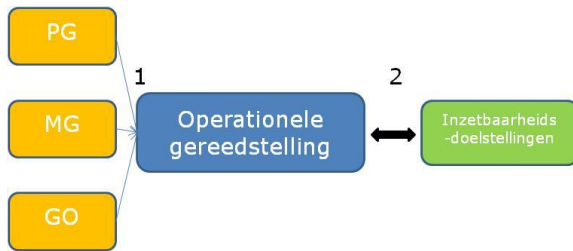
The most important product that the armed forces provide is operational readiness (OR). This means: trained units with ready weapon systems that can be deployed nationally and/or internationally. At the request of the House of Representatives, the Ministry of Defence budget has included readiness tables since 2015, in which the readiness of all weapon systems is scored compared to the relevant norms. Over the coming years, the Ministry of Defence will also provide insight into the progress of operational readiness.

Operational readiness forms the foundation of the armed forces. After earlier cutbacks, the current Netherlands government has increased the Ministry of Defence budget, with a large part of the extra funding being allocated specifically for basic readiness. It is well known that there are still limitations in the area of operational readiness. An inter-ministerial policy study can provide insight into what operational readiness really means and a breakdown of expenditure. On that basis we can determine which controls need to be employed to improve the efficiency and effectiveness of operational readiness. In comparison to the inter-ministerial policy study on weapon systems *IBO Wapensystemen* (2015), in this study we will take a closer look at the efficiency and effectiveness of the readiness process on the operational side of the armed forces.

#### *Elaboration*

The Ministry of Defence has a step-by-step management system. The starting point is the ambition level of the Ministry of Defence, which - within the framework of the International Security Strategy - is set out in the Ministry of Defence budget in the form of the deployability targets. To achieve these deployability targets, the budget specifies for each operational command how many of its units must be at a state of operational readiness (OR) in a particular year. The Ministry of Defence determines the norms that a unit must meet to actually be at a state of operational readiness (for example: two out of the four frigates must be ready to operate each year). Whether a unit achieves that norm depends on the extent to which the materiel of the unit is ready (materiel readiness), the extent to which the personnel of the unit is ready (personnel readiness), and the extent to which the personnel have been able to exercise with the materiel at the right level (preparedness).

The diagram below shows a very simplified overview of the process that the Ministry of Defence completes to achieve operational readiness (1). It should be noted that personnel readiness and materiel readiness are a prerequisite for preparedness.



This management approach assumes an existing amount of capabilities and a certain amount of sustainability. The sustainability consists of the extent to which a multitude of similar capabilities is available within the organisation in order to be able to continue a certain operational deployment.

As stated above, the operational commands' readiness orders are derived from the four deployability targets. The level of readiness required for the different targets is not the same, however. The readiness norms for participation in crisis management operations differ, for instance, from the norms in place for the defence of national and Allied territory. For example, a frigate without sonar is officially not operationally ready, but can combat piracy. Retasking and deployment in an interstate conflict, however, would only be possible to a limited extent.

In addition, repeated deployment results in a reduction of full operational readiness. Another example is the deployment of F-16 fighter aircraft above Iraq, which *reduces* the skill level of F-16 pilots at the highest level of the spectrum of force. Experienced pilots become 'under-exercised' owing to continuous one-sided deployment. How can this be taken into account during the readiness process?

### Working group remit

The inter-ministerial policy study sets out the expenditure breakdown with regard to readiness and what the levers are for organising this process as effectively and efficiently as possible, as well as how readiness can best be aligned with the deployability targets. The study reports on alternative policy options achievable with a budget of the same size (around 7.9 billion).

The working group discusses the following points/questions:

- Determine the scope and definition of the concept of operational readiness on the basis of three specific cases.
- What is the expenditure breakdown for meeting the current deployability targets and which readiness norms are involved?
- Consider the possibilities that could lead to greater effectiveness and efficiency for the current readiness process or how a better balance can be struck between targets and means. Also take other factors into consideration, such as international cooperation, a different maintenance schedule, length of deployment, resources management, personnel, exemption from deployment, and the commander's professional judgement.
- Describe the realisation of operational readiness over the past five years (for the most important units).
- Explain what mechanisms influence operational readiness and which levers are employed, or can be employed, in terms of efficiency and effectiveness. In this regard, the working group actively looks at foreign armed forces and considers how they manage to achieve operational readiness and how they fit this into the financial frameworks.

- Consider the relationship between the current deployability targets and operational readiness, on the basis of the deployability targets formulated in the white paper entitled ‘In the interest of the Netherlands’.
- Analyse several cases that show a difference between the delivered level of readiness and the need that emerged during the mission: what recommendations can be made to make these differences as small as possible prior to a mission? Does this require a different approach to achieving the readiness process? How can we make this more adaptive?
- Consider the possibilities for an increase in the future readiness within a budget of the same size.

### **Organisation of the study**

Members of the working group (ministries and external experts): Ministry of Defence, Ministry of Finance, Ministry of Foreign Affairs, and Ministry of General Affairs. The working group may involve external experts in the study (e.g. McKinsey, RAND Europe, Clingendael, HCSS and other research agencies specialising in business-economic analysis). The working group is led by an independent chairman, who is supported by a secretariat from the Ministry of Finance and the Ministry of Defence.

The working group will start no later than September 2016 and will submit its final report no later than 1 April 2017. The report will be no longer than 30 pages, plus a summary of no more than 5 pages.

## Appendix 5: Number of capabilities (organic components) in 2015

COMBAT		COMBAT SUPPORT		COMBAT SERVICE SUPPORT	
	#		#		#
NLMARFOR	1	Landing platform dock	2	Sea-based support group	1
Marines combat group	2	Minehunter	6	Hydrographic survey vessel	2
LC frigate	4	Surface assault & training group	1	Support vessel in the Caribbean	1
Multi-purpose frigate	2	Patrol ships (OPV)	4	Submarine service support vessel	1
SOF squadron	2	Diving & explosive ordnance disposal group	1	KDC-10	2
Submarine	4	Boat platoon	1	C-130 Hercules	4
F-16	61	CH-47 Chinook	17	Ground installation defence platoon unit	4
AH-64 Apache	29	AS532 Cougar	12	Air ops control station	1
NLD part of HRF HQ	1	NH90	13	NATO Datalink mgt cell	1
Brigade staff	3	NLD part of CIS battalion	1	NLD part of staff support battalion	1
Recce coy	3	ISTAR module	5	CIMIC support element	4
SOF coy	4	(R)DTF HQ	1	Psyops support element	4
Manoeuvre battalion	7	PATRIOT fire unit	3	Medical platoon	7
NATRES battalion	3	AMRAAM platoon	2	Bn Staff NSE	1
Cyber command	1	STINGER platoon	3	BN STAFF medical battalion	1
<b>TOTAL</b>	<b>127</b>	Fire support command staff	1	Transport module	7
		PzH/Mortar battery	3	Supply platoon	3
		Armd eng coy	4	Repair platoon	11
		Airmobile eng platoon	3	Role 2 medical treatment facility	4
		CIS coy	3	<b>TOTAL</b>	<b>60</b>
		Eng bn staff	3		
		Construction coy	2		
		Bridge module	2		
		CBRN coy	2		
		<b>TOTAL</b>	<b>95</b>		
		(Excl. RNLM and 48 explosive ordnance disposal teams)			

## **Appendix 6: Deployment of technology and innovation in the readiness process**

### **Introduction**

In this document, some examples are given of deployment of technological innovations<sup>71</sup> that could improve the readiness of the armed forces. The improvements focus on more effective and/or efficient readiness, where readiness<sup>72</sup> is split up into personnel readiness (PR), materiel readiness (MR) and preparedness.

The starting point for identifying promising technological innovations is that they can be deployed in the short term. That implies that we work on the basis that all technology is available or almost available (high technology readiness level). In some cases it is even already used to a limited extent within the armed forces, but upscaling could have great benefits (for effectiveness and/or efficiency). In other cases, the technology is already developed enough to be tested and even deployed, but to date this has not been done. In these cases, experience of use and implementation will often have to be gained through pilot projects. In addition, there is also technology in development that could lead to significant readiness improvements in the mid to long term. We will address these in brief at the end of the document.

### **Promising technological innovations**

The technological innovations are categorised according to the three components of readiness:

- Materiel readiness
- Personnel readiness
- Preparedness.

A number of promising technological innovations for each of these components have been included in the tables below. A description is given of each technological innovation. In addition, a brief description is given of the expected effect of the innovation on military operations, as well as the current state of affairs in relation to the relevant technological innovation. There are of course many more innovations that could have been included, but for the current purpose, we have included a selection that provides a wide enough range for the various components of readiness.

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<sup>71</sup> Process and organisational innovations (such as greater transparency in standardisation, sufficient priority for ILS, contracts with companies in the context of performance-based logistics, optimisation of training chains, and a more flexible personnel policy and system) are not included in this document. Many of these innovations are benefited by the use of new/innovative models and methods.

<sup>72</sup> The Ministry of Defence differentiates between operational readiness and deployment readiness (for a specific mission); we do not make this distinction explicit in this document, but they are often implicitly included in the description of the innovations.



## Matériel readiness

No	Description	Effect	State of the art
1	<b>Use of real-time smart data for logistics:</b> Smart applications in logistics, based on the capability to establish a link with various open/secure real-time data sources.	Flexible, adaptive and responsive logistic support based on improved situational awareness and more efficient logistic support. Ensures timely availability of spare parts, for example.	There are examples of applications at commercial companies. Security of communication remains an important precondition for the armed forces.
2	<b>Continuous monitoring of remaining performance of vehicle frames<sup>73</sup>:</b> The structural integrity throughout the service life and the exposure to ammunition effects are monitored and assessed using distributed sensors. In this way, the functionality/remaining functionality is assessed with regard to completing missions/tasks. Can be combined with self-healing matériel and repair techniques.	Increased survival and functionality and improved self-reliance of military units. Reduction of maintenance costs. Greater radius of action. Earlier detection of expected failure improves mission planning.	Continuous monitoring has not yet been applied to military vehicles.
3	<b>Integrated monitoring of ammunition life-cycle:</b> Applying sensors and RFIDs for monitoring and establishing the status/condition of ammunition throughout the entire chain.	Monitoring the status (condition) of ammunition (gun launched and/or guided missiles) throughout the chain leads to a greater saving by preventing unnecessary destruction of ammunition and by facilitating condition-based maintenance. Starting in the mission area, as the largest volume of ammunition is lost here due to inadequate ammunition management and the lack of insight into the condition of the ammunition.	No integrated, real-time system available.
4	<b>3D printing:</b> Applying 3D printing at the home base and near to the mission area for the purpose of making spare parts available in good time. Particularly interesting for spare parts that are not in stock or are always in limited stock.	Reduction of downtime caused by a lack of spare parts. Reduction of logistic footprint (and therefore less transport, less protection, etc.).  3D printing makes it possible to produce spare parts that are not in stock. For 'slow movers' in particular, this reduces the need for buffer stocks and/or shortens	The development of 3D-printing technology is in full swing. An example of a domain in which a lot of research and development is being carried out is the aircraft industry, in particular 3D printing of critical metal parts/spare parts. 3D printing is now possible with a variety of materials: polymers, ceramics, concrete, metal, accommodation and food. The printing speed is still, however,

<sup>73</sup> Points 3 and 4 are two aspects of the same thing, namely the implementation and use of prognostic health management (PHM). This could be applied to the part of the matériel where wear and tear and the condition are hard to predict. PHM makes it possible to detect malfunctioning earlier. It goes without saying that this impacts on the current method of maintenance planning.

No	Description	Effect	State of the art
		<p>the standstill that occurs when a spare part is not in stock, particularly when the waiting periods for delivery are long. In order to exploit the added value of 3D printing, it is necessary to include this in the set-up of operational management. In this regard it is important not only to consider peacetime operational management, but missions too.</p>	<p>relatively low and it is not always possible to attain high enough quality.</p> <p>For the armed forces it could be interesting to follow developments with regard to ammunition and to contribute to them. After all, ammunition is always in short supply and is often a showstopper during training, exercises and missions. The Netherlands Organization for Applied Scientific Research is currently carrying out the first experiments with 3D printing gunpowder for ammunition.</p>
5	<p><b>Integration of logistic ICT planning systems:</b> Comprehensive systems that include all logistic functionalities: warehouse management system (WMS), transport management system (TMS), global trade management (GTM), supply chain visibility (SCV) and enterprise resource planning (ERP).</p>	<p>Improved and more efficient logistics support, leading to less downtime of systems, for example.</p>	<p>Order, fleet and transport management planning systems are all integrated, but the digital link and the connection between the systems of all stakeholders in the logistics chain/network is still missing.</p>
6	<p><b>Optimisation of life-cycle management of weapon systems and other systems:</b> Comprehensive modelling capability for weapon and other systems that provides an overview at all times of the system reliability, costs and performance, and opportunities for optimisation. The greatest (innovative) challenge in this regard is bringing together theory and practice: determining the right level of detail, the need for data and how the current status of the system/fleet (e.g. overdue maintenance/disruptions in the chain that were caused by not placing orders) can be incorporated in the right way. For the future, new technologies (e.g. PBL) and their consequences will also have to be modelled correctly.</p>	<p>Provides insight into mission performance of weapon and other systems, as well as the availability and reliability. This facilitates, in particular, the efficient deployment of weapon and other systems by reducing costs (e.g. maintenance costs).</p>	<p>There are already models for this purpose, e.g. Tools4LCM, SEM, OSCAM and OPUS. The majority of these models have in common that the whole system (i.e. not components thereof) and even the whole fleet are taken into consideration. There are differences, for example, in the extent to which costs are incorporated (at best as a result, and sometimes only the outputs relevant for a cost estimate). None of these models uses the budget as a pre-condition for optimisation, for example. They are all “what-if” models. In addition, there are differences in the level of detail, e.g. with regard to modelling usage.</p>

## Personnel readiness

No	Description	Effect	State of the art
1	<b>Tools for psychological selection based on military requirements:</b> Tools that are, for example, based on serious games or neuro-cognition, in order to determine whether candidates meet specific psychological military requirements.	Lower drop-out rate during qualification, training and deployment.	Standard (not specifically military) psychological selection tests are already available; these are mainly based on interviews and questionnaires.
2	<b>Wearable integrated biometrics:</b> A wearable system with the following functionalities: 1) storage for complete medical file; 2) collection of physiological and situational parameters; 3) tele-medicine (including wound detection and determination of 'time to falling-out/death'; 4) ballistic/blast impact measurement (e.g. in helmet).	Improved insight into physiological and medical condition of soldiers. Can be used to improve fitness and medical care, both during deployment and during after-care phase. Ultimately ensures sustainable deployability.	Separate subsystems are available (primarily for cardiovascular and activity measurements), but these are not easy to use in a military setting (user-friendliness and robustness).
3	<b>Model-based personalised ergonomic soldier systems:</b> Ergonomic models are now almost advanced enough to enable the optimised design of personal protective equipment and other individual systems.	What is known as the physical load is impacted on by both the positioning of the load (ergonomics) and its weight and size. Personalised designs can improve the effectiveness and protection of the soldier.	3D anthropometry is currently being applied to enable the design of clothes, helmets and shoes that fit well. Well-integrated human models that make personalisation possible are, however, not yet available (anthropometry, biomechanics, warmth/cold, etc.)
4	<b>Powered and unpowered exoskeletons:</b> Powered exoskeletons improve the physical performance of the soldier. Unpowered exoskeletons do not improve physical performance, but do lighten the physical load.	Substantial increase in the physical ability of the soldier (longer deployment with the same physical load, less chance of injury/fatigue) and improved (physical) resilience.	There are currently no MOTS systems available. Experimental powered exoskeletons are available. Unpowered exoskeletons are not available in the military domain. Developments are currently underway for the first prototype, including for the Netherlands Ministry of Defence.
5	<b>Supporting intelligence via big data</b> The combination of the increase in OSINT (Open Source Intelligence), the increase in sensors (the civilian 'internet of things' trend will also find its way into the military domain) and the limited capacity of intelligence analysts results in bottlenecks. Current and future operations demand quicker intelligence products (but always with the necessary accuracy), making efficient analysis capacity a necessity. The use of technology is therefore logical, but certainly not the only answer (also	In principle, good intelligence is a factor that contributes to all three forms of readiness. The current shortage of intelligence personnel can partly be mitigated via big data, whereby intelligence products can be delivered better and more quickly. This has advantages when preparing for a mission, both when preparing the units (which are thus better prepared for their mission) and when planning of the mission (which capabilities are needed where and when). The latter may	Big data is currently going through fast-paced development. There are still some caveats regarding the use of A.I. (deep learning). The problem is that deployment of this technology is still limited, because it works very well for trend analyses but not for all intelligence products. The problem is that these techniques are based on and tuned to historical data. Predicting 'typical' behaviour on that basis already works quite well, but is less effective in the intelligence domain.

No	Description	Effect	State of the art
.	training, organisation).  Big data analysis techniques (including the use of AI) support and provide insight into the collection of open-source data as well as analysis capacity.	mean, for example, that means are allocated more effectively and more efficiently.	

## Preparedness

No	Description	Effect	State of the art
.			
1	<b>Live virtual constructive (LVC) training:</b> Training in which real systems, simulators and simulation models are used together to create a realistic exercise setting. This requires technical interfaces to enable the linking and synchronisation of the various heterogeneous systems.	Increased flexibility and efficiency in exercises, as not all real systems have to be present during the exercise. Sometimes, systems are not available (in connection with maintenance or deployment) or they are not permitted to be deployed due to safety/environmental/noise restrictions (e.g. flying low). With LVC it is nonetheless possible to practice in a fully realistic setting, and costs are also saved (deployment simulation is cheaper than deployment of live systems).	The Ministry of Defence already has limited experience with LVC. The JPOW (missile defence) mission already uses LVC. Upscaling LVC across the Ministry of Defence could have great benefits.
2	<b>Virtual exercises and mission areas:</b> Digitalising exercise and mission areas, enabling training, exercises and mission preparation to take place in a virtual world.	This makes the deployment of simulation for exercises, training and mission preparation much more realistic, which increases the educational value. Ultimately, this results in better preparation for the individual and the team. Virtual mission areas can even be used for mission planning, both prior to and during the mission.	Exercise areas are currently already digitalised. Uruzgan and Mali have also been digitalised, but the process from need to development and procurement took too long for it to be of sufficient benefit during missions. This process needs to be improved. In addition, technologically speaking, steps can be set to significantly reduce the production time needed to digitalise areas. Rapid advancements can be expected in this regard.
3	<b>Instrument-controlled training area</b> The deployment of LVC simulation to enable instrument-controlled training areas. By means of duel simulation, the integration of social-cultural interactions and potentially weapon systems that are not/not yet available, military units can realistically train for their tasks in a live	Increasing realism, interoperability and integration of live, virtual and constructive simulation and the resulting increase in educational and training value.  For example, integrating certain types of weapon systems (particularly recently procured or	The Netherlands already has a mobile combat training centre at its disposal, which can support live exercises in the Netherlands and abroad. Cooperation with foreign units in this regard is more the exception than the rule. As every country has its own training system, promoting interoperability is a requisite. Often,

No	Description	Effect	State of the art
.	environment.	<p>upgraded systems) into the live training system. These should be incorporated in good time/at an accelerated rate, in order to make it possible to actually train with all available capabilities together.</p> <p>Realistically “dressing” the battlefield with good effect representation is vital to creating a credible trainings context, so all learning objectives can be met. Certainly with regard to role play there is a still a lot of room for improvement when it comes to creating the right social and cultural context. Role play is currently minimal (a LOTUS victim or a few military personnel dressed up) and a lot is asked of the imagination of the units to be trained. The right role play, both qualitatively and quantitatively, can hugely improve the experience and training value.</p>	<p>temporary solutions are implemented case-by-case, but standardisation of interfaces in the NATO context, as strived for by the NATO and SISO working group Urban Combat Advanced Training Technology, is vital in order to be able to exercise in a variety of alliances with NATO and PfP partners.</p>
4	<p><b>Automatic scenario generation:</b> Developing scenarios for training courses and exercises is a rather intensive process. By working with a repository of scenario blocks and by applying AI techniques, scenarios can be developed more quickly and flexibly.</p>	<p>The advantage is the time saved, meaning scenarios can be developed more quickly. But the current shortage of instructors and exercise leaders can also be partly mitigated by a higher level of automation. In addition, the current approach does not make it easy to quickly and flexibly adapt scenarios. By using AI, the quality of scenarios can be increased, in turn increasing the training and mission-preparation value.</p>	<p>In the gaming industry, the developments in this domain and in particular the use of AI for developing and improving scenarios is developing at a fast pace. The Netherlands Organization for Applied Scientific Research and the NATO MSG have taken the first steps towards the automation of scenarios for training courses.</p>
5	<p><b>Monitoring system for readiness of units:</b> System that follows the readiness status throughout the entire pre-deployment preparation period, including retention (maintaining competences) for the purpose of establishing training needs and certification. This requires an objective assessment system and standardisation. There is also AI technology for user profiling, to identify what individuals in a military unit need to learn or brush up</p>	<p>Increased flexibility and efficiency of the readiness process, because training and exercises can be customised to what a particular unit or individual within a unit specifically needs. The quality increases, because there is better monitoring of what is going well and what is not, which increases the deployability of units. It will be possible to provide better</p>	<p>The Land Training Center (LTC) has started a new initiative for a monitoring system for use by trainers and evaluators for units at level 5/6. The British army uses the Exonaut system, which inspired the Netherlands Ministry of Defence. There are currently no techniques or systems that can monitor retention at the individual and collective level and predict the extent of readiness over time on this basis. The AI</p>

No	Description	Effect	State of the art
.	on.	substantiation for certification.	techniques needed for user profiling also still need to be developed.

All innovations mentioned need to be incorporated in a readiness system or methodology that is used across the armed forces, to ensure that it is safeguarded and that it becomes more than simply individual innovations. This will of course also lead to changes in procurement, in personnel policy and in the instruction and training chain, etc. Only then will the innovations also result in a sustainable improvement to the readiness.

### Longer-term developments

In many areas, developments will take place over the coming 5-15 years, which may and will have major consequences for the Ministry of Defence, and which may also have a positive impact on readiness. This should be taken into account when, for example, procuring or developing new materiel. For these developments, NATO uses the abbreviated term BRINES<sup>74</sup>. Some examples of developments and their effect are:

- BIO (biotechnology): improving human performance (human enhancement) and developing new therapies by means of gene technology and synthetic biology and increasing the sustainable readiness of the serviceman/women in this way (e.g. by means of monitoring the mental state). This will result in lower drop-out rates and quicker recuperation.
- ROBO (robotics (including human-robot interaction): an increase in unmanned systems means that these can be deployed for 'dull, dangerous, dirty' tasks (clearing explosives, surveillance, transport, etc.), thus reducing the physical load and to a certain extent the cognitive load of the military personnel. In the mid to long term, unmanned systems will also be able to take over more intelligent tasks, causing the role of humans (military personnel) to change.
- INFO (information technology, including cyber, quantum computing, internet of things, sensors and AI): quick and flexible release of information, more intelligence in systems. These developments make smart logistic networks possible and contribute to the prognostic health management and self-diagnosis of systems. In this way, the materiel readiness of systems can be improved.
- NANO (nanotechnology and materials including 3D printing): smaller and lighter materiel with the same, or even better strength than current materials. As a result the transport of systems will become less taxing, reducing wear and tear. Complex and hybrid structures will then also be able to be printed (3D), as a result of which the possibilities of applying 3D printing will increase.
- ENERGY (energy generation, storage and propulsion): with new battery technology, use of energy grids, etc., dependence on fossil fuels will reduce. The sustainability of people and materiel will also increase.
- SYSTEM (systems (including satellites, weapons, logistics)): far-reaching automation and modularisation of systems means the dependence on people reduces, single points of failure can

<sup>74</sup> NATO Technology Trend Survey (2015); BRINES stands for BIO-ROBO-INFO-NANO-ENERGY-SYSTEM.

be reduced, and systems can also take on a greater variety of tasks (resulting, for example, in a reduction of the number of systems in the mission area).

Appendix 7. English translation of the covering letter (in Dutch) from the Chair of the Working Group, DJ van den Berg, to the Chair of the Official Review Committee

D.J. van den Berg

The Hague, 12 March 2017

Dear Members of the Official Review Committee,

I hereby present you the final report of the working group for the inter-ministerial policy study on readiness 'Readiness in focus'. I am pleased to be able to inform you that all members of the working group endorse the recommendations of the report.

Soon after starting, it became clear to us that improving readiness cannot be considered a separate issue, for which a number of measures can be implemented that will have a direct effect. It also became clear to us that it is not possible to establish a direct link between the costs of readiness and the extent of readiness. While there is considerably detailed insight into the breakdown of readiness costs, this is not the case for the manner in which this can improve the readiness output. The working group had four case studies worked out in more detail and studied these. This resulted in two key insights: 1) The case studies confirm the general observations with regard to the readiness of the armed forces and 2) the case studies show that improvements – sometimes different according to capability – are possible in the organisation and set-up of the readiness process.

As the Ministry of Defence has previously indicated in letters to the House of Representatives and as has been confirmed by the Netherlands Court of Audit, the readiness of the armed forces has declined significantly. The norms for readiness have also been reduced under budgetary pressure. Decisions have been made during the implementation of cutbacks that have not made the readiness process any easier. The intention has been to spare the combat units of the Ministry of Defence at the expense of the supporting units/combat supporting units and investments/replacement investments. Organisational choices have also been made with a view to efficiency (and therefore cost savings), such as the pooling of supporting services, that have not made readiness any easier either. The government has chosen to keep a number of capabilities as broad as possible, with the idea that the armed forces can respond to as many different situations as possible. This has led to a critical minimum size of capabilities, as a result of which a lot of time is needed to bring readiness back up to standard after deployment. It would seem that the negative impact of deployment on the readiness process has been underestimated, or has at least been brought to light insufficiently clearly during deployment decisions.



In my opinion, the core of the report is that – in my words – three coherent loops need to be established:

the coherence of policy, budget and investments, and the form of consultation. The coherence of policy can be realised by setting up a coherent ‘cascade’ with a multi-year vision of the set-up and composition of the armed forces as the starting point, on the basis of a comprehensive security analysis. The multi-year vision provides the context for the readiness matrix to be established annually (linked to the budgeting cycle) on the basis of which decisions to deploy can be taken in an integral manner (i.e. including all effects on readiness and the multi-year vision) throughout the year.

The second loop consists of the fiscal outlook, where the expenditure for investments (in line with the multi-year vision), the operational costs for the readiness process, and the expenditure for deployment are not mutually interchangeable. This requires in any case an investment budget, with a finger kept on the pulse by means of a strict project-based approach and a transparent administration of the estimated total costs of a deployment, which will then be reimbursed.

The coherence between the content and the budget – the third loop – should subsequently be safeguarded in an inter-ministerial form of consultation at all levels, which brings to the table the involved ministries responsible for the policy (Ministry of Defence, Ministry of Foreign Affairs, Ministry of General Affairs, Ministry of Finances, Ministry of Security and Justice) in good time and at the right moments, with the right agenda and information in order to be able to make the necessary assessment, from a coherent perspective (content and finances).

With regard to the set-up of the readiness process, we have arrived at the following recommendations:

1) the choice for smaller building blocks (‘force elements’) in order to be able to flexibly arrange the readiness process and deployment, 2) the standardisation and measurement of readiness and readiness targets, 3) the development of a cost-to-readiness model (with the measurement of the output side as the greatest challenge, 4) the protection of ready units against dismantlement by means of ring-fencing, 5) the realisation of sufficient scales, by means of, among other things, procurement according to international standards, and 6) analysis of the major logistics processes with the aid of a ‘peer review’ mechanism.

With regard to investments, readiness costs and deployment costs, the working group particularly recommends the following: 1) giving the armed forces insight into stable multi-year financing of investment projects, viewed in conjunction with the multi-year vision process, 2) tackling the enablers as a priority, 3) mapping out the effects of extension straight away when deciding to deploy and synchronising extension decisions as far as possible and 4) gaining better insight into the integral costs of deployment by means of a costs register.

Finally, the working group points out the possibilities of the introduction of new and existing technologies in the fields of modelling, simulation, decision-making and logistic processes for the improvement of the readiness process.

In closing, I would like to express my appreciation of the very constructive manner in which the participants contributed to the working group. I would particularly like to express my appreciation for the efforts on the part of the Ministry of Defence. My final word of thanks goes to the secretariat, which carried out a lot of research and did justice to the discussions in the working group in an alert and integral manner.

Yours faithfully,

D.J. van den Berg