

Article 12 Technical Assessment

of the MSFD 2012 obligations

The Netherlands

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Final version



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Section 1. Introduction and cross cutting issues

Overall Approach

The Netherlands (the NL) first uploaded its reporting sheets on 15 October 2012, together with the paper report (in both Dutch and English), and then new versions of the reporting sheets on 30 April 2013. The paper reports contains two main chapters in which clear distinctions between the following parts are made:

- Initial assessment (art. 8) (Chapter 2)
- GES determinations 2020 (art. 9), targets 2020, (if necessary) additional policies and indicators (art. 10) (Chapter 3).

Following the completeness check, the Netherlands have submitted a letter to the Commission with extensive explanations and justifications about the gaps in reporting on/coverage of the various descriptors. The assessment also takes into account this information. In this letter, the NL acknowledges that it has carried out its initial assessment prior to defining its GES for the descriptors and setting the environmental targets, which explains why no assessment of status in relation to GES has been made in the Dutch initial assessment. This approach differs from the Directive's objectives for Article 8.

The Netherlands have chosen to describe GES in a broad, qualitative way, considering GES as a high level aspirational aim. For most descriptors (1, 3, 4, 5, 6, 8 and 9), the Dutch definitions of GES are a mere copy of the Directive definitions. For the remaining four descriptors (2, 7, 10, 11), the definition of GES has been slightly amended. In the case of litter and underwater noise (D10 and D11), the changes reflect the consensus reached in OSPAR. In its response to the completeness assessment, the NL mentioned that it has opted to determine GES entirely qualitatively, relying on the underpinning environmental targets to articulate quantitatively the point at which GES is achieved, in line with the Common Understanding Document (paragraph 5.11). GES is only defined at the descriptor level and the criteria from the Commission Decision are not used to define GES but to set targets. Netherlands have grouped descriptors 1, 3, 4 & 6 under 'Biological diversity', whereas the Commission has not included Descriptor 3 in this group.

The Netherlands mention that in the case of descriptors 1, 3, 4, 6 and 10, GES in 2020 is not yet attainable and for descriptors 5 and 8 is only partially attainable. The Netherlands has however not specifically assessed the status of the MSFD descriptors in relation to their GES definition and justify this by stating that they did the initial assessment before defining their GES. Considering that the NL states that GES cannot be achieved for several descriptors it can be inferred that they consider GES not reached but it is unclear on which criteria this judgement is based. The targets for 2020 are interim targets, setting the course towards GES. In future MSFD management cycles these targets will be adjusted. Where GES cannot be achieved in 2020, the aim is to reach GES by 2027. Most described indicators are related to existing frameworks such as ICES and OSPAR. For several descriptors, indicators have yet to be developed' and are (presumably) therefore missing.

Finally, the Netherlands have assessed that the government expenditure for the implementation of the marine strategy between 2012 and 2020 is approximately 26 million euros. This amount is already allocated in the multiannual budget of the relevant ministries and covers necessary measures that are additional to those under existing or proposed statutory frameworks e.g. WFD, Natura 2000, etc. It does not cover additional policy assignment under the CFP. The additional measures consist primarily in detailing the seabed protection of the Frisian Front and Central Oyster Grounds, intensifying policy on litter, developing new indicators and knowledge programming and generating information from the monitoring programme.

Scope of the marine waters

The Netherlands is part of the North East Atlantic. The spatial delineation of the Netherlands marine waters is defined by the Dutch Continental Shelf. The Netherlands excludes the Oosterschelde, the Westerschelde and the Wadden Sea from the coverage of the Marine Strategy and justifies this exclusion as follows: 'although these areas clearly do relate to the North Sea they are already fully protected under the Birds Directive and the Habitats Directive and are, as such, designated Natura 2000 areas. They are also governed by the Water Framework Directive. This safeguards the ecological protection of these areas.' This seems not to be in line with the requirements of the Directive, which indicates that WFD coastal waters are part of the MSFD 'marine waters'. The Netherlands have not defined formal sub-divisions.

Assessment areas and aggregation scales

The assessment area is the Dutch marine waters as a whole. At this stage, no specific assessment area has been defined. There is no indication on aggregation scales.

Regional cooperation

The Netherlands is party to OSPAR. Efforts for regional coordination within OSPAR and informally through bilateral contacts with relevant countries are extensively described. With regard to coordination within OSPAR, the Netherlands notes that while there has been a high level of information sharing and coordination for the IA and GES, information sharing on the development of coordinated environmental targets and indicators was moderate. In terms of coordination problems, the Netherlands underline that the timeline and ambitious requirements of the MSFD prevented the coordination in relation to GES definition and the setting of environmental targets. It describes the additional actions identified within OSPAR to improve coordination for all GES descriptors. More details are provided in the following sections for each descriptor.

Socio-economic analysis

The Netherlands have used the water account approach for its economic and social analysis of the marine uses and a cost-based approach for the cost of degradation, referring to the guidance document produced by the ESA WG without further specification. Fourteen marine uses/activities have not been reported upon and the Netherlands provides explanations in response to the completeness assessment in order to justify these gaps. The Netherlands consider that there is no information gap, but that the information would be updated for the Programme of Measures.

Data and knowledge gaps

In the reporting sheets, data and knowledge gaps are mentioned, notably for the assessment of features and, in relation to pressures, for noise, litter and marine acidification. The paper report provides a list of priorities in knowledge programming. The following topics are indicated:

- Marine ecosystem: Additional knowledge is needed to develop indicators for marine ecosystem, in particular knowledge about effects of primary disturbances.
- Litter: Knowledge about the presence and risks of microplastics is a high priority. Research protocols for specification of indicators for the presence of litter on the seabed and in the water column should be developed.
- Underwater Noise: main areas relate to the establishment of noise levels, including temporal and spatial variations, the main noise disruptions and sources of noise; the effects of different types of noise and accumulation of noise, as well as an assessment of the cost effectiveness of mitigating measures to prevent or reduce noise emissions.
- Specification of the three core measures: Research into the (cost) effectiveness of possible measures under the CFP, into supplementary seabed protection and into countering litter is needed to prepare the programme of measures to be completed in the course of 2014.
- Cumulation: a better understanding of the cumulative effects on the marine ecosystem resulting from developments in marine uses and other external influences with a view beyond 2020.

However, it is not entirely clear from the reporting sheets how these data and knowledge gaps will be concretely addressed, apart from cases where reference is made to on-going work under OSPAR. The

Netherlands also indicate that they intend to conduct research in collaboration with national and international institutes and international and EU research programmes, while also linking with other on-going fundamental research programmes.

Section 2. Summary of the assessment

The table presents a summary of the assessment, using the following keys:

Keys	Meaning
+++	Good practice (can be attributed to one individual criterion)
++	Adequate
+	Partially adequate
-	Inadequate
0	Not reported

	GES		Initial assessment		Targets	
	Assessment	Criteria	Assessment	Criteria	Assessment	Criteria
D1	-	<ul style="list-style-type: none"> Only set at descriptor level (verbatim copy of descriptor 1,4 and 6 from annex I) No baselines or reference points No reference to BHD No reference to WFD normative definitions of ecological status No reference to OSPAR EcoQO 	<p>+</p> <p>Pressures:</p> <ul style="list-style-type: none"> Physical loss has only been assessed for shallow sand habitat No judgement on the pressure and impact of physical damage Indication of the geographical area where the pressures occur is provided as is the proportion of the features impacted 	<p>++</p> <p>Features:</p> <ul style="list-style-type: none"> Relevant predominant habitats, species groups and ecosystems are identified. Reporting on habitat types is done at a sufficient level of details while it is rather limited at the ecosystem level No judgement on the status of features has been made in relation to GES but a judgement has been made in relation to natural conditions The status of certain species is judged on the basis of EU or regional standards (MSY, FCS) The Netherlands has judged the ecosystem of the North Sea as a whole as not good. 	+	<ul style="list-style-type: none"> None of the targets are SMART and it is not possible to determine whether they are achievable or realistic. Most associated indicators are still under development. Targets do not directly address all relevant pressures and impacts Detailed justification for the approach chosen Description on how gaps will be addressed (largely through OSPAR)
D2	-	<ul style="list-style-type: none"> Only set at descriptor level (verbatim copy of Descriptor 2 from Annex I) No baselines or reference points 	+	<ul style="list-style-type: none"> Relevant NIS are covered Impacts on functional groups are described (although in a general manner) Pathways of NIS introductions provided for each species Relevant geographical coverage No judgement on level and impact of pressure Lack of judgement justified but no plans to address the gaps. 	-	<ul style="list-style-type: none"> Target not SMART (not specific, not measurable) Target does not address clearly main sources of introduction Target not ambitious enough as only address risk of introduction and not further spreading

	GES		Initial assessment		Targets	
	Assessment	Criteria	Assessment	Criteria	Assessment	Criteria
D3	-	<ul style="list-style-type: none"> - Only set at descriptor level (verbatim copy of Descriptor 3 from Annex I) - No baselines or reference points - No reference to CFP 	++	<ul style="list-style-type: none"> - Comprehensive assessments of fleets - Impacts on stocks assessed - Impact on seabed assessed - Links to initial assessment to targets - Strongpoint is the inclusion of data on recreational fisheries. 	++	<ul style="list-style-type: none"> - Clear target requiring all stocks to be exploited at Fmsy - Minimizing discards is a good practice (+++) - Unclear whether it is the target for all stocks to have a SSB at or above the PA level.
D4	-	<i>See D1.</i>	+	<ul style="list-style-type: none"> - Indication is giving of the status of top predators by using the OSPAR Large fish indicator EcoQO. - No judgement provided on other ecosystem characteristics such as productivity and structure - Large fish only food web indicator used which is not sufficient. 	+	<i>See D1.</i>
D5	-	<ul style="list-style-type: none"> - Only set at descriptor level (verbatim copy of Descriptor 5 from Annex I) - No baselines or reference points - No clear explanation of the integration of the WFD normative definitions of ecological status and the MSFD GES 	+	<ul style="list-style-type: none"> - IA predominantly descriptive - IA refers to some pressures and trends but in general very little quantitative information is presented - Status assessed but not in relation to the GES definition 	+	<ul style="list-style-type: none"> - Targets are sufficiently ambitious to achieve GES - Target 5b might not be realistic by 2020 - No targets addressing the effects on macrophytobenthos communities - No targets on water transparency
D6	-	<i>See D1.</i>	+	<i>See D1.</i>	+	<i>See D1.</i>
D7	-	<ul style="list-style-type: none"> - Only set at descriptor level (verbatim copy of Descriptor 7 from Annex I) - No baselines or reference points 	++	<ul style="list-style-type: none"> - Reports on pressures and trends - Refers to and evaluates relevant changes and level of impact of hydrographical changes - Changes reported are consistent with those reported for the WFD and OSPAR QSR 	++	<ul style="list-style-type: none"> - Target 7a is a reformulation of the definition of GES and from the Commission Decision. - Target 7b, is considered to be a SMART target, directly targeted and sufficiently ambitious to reduce impacts to level that will achieve/maintain GES.
D8	-	<ul style="list-style-type: none"> - Only set at descriptor level (verbatim copy of Descriptor 8 from Annex I) - No baselines or reference points - Reference to existing policies in the accompanying text are not specific enough to compensate for the lack of specification of the definition. 	+	<ul style="list-style-type: none"> - Level of pressure is not assessed at a sufficient level of detail - Past trends are assessed - The assessment of impacts on functional groups is limited and focused solely on TBT - Judgement on status is made using existing policies and agreements but status not assessed in relation to the GES definition 	+	<ul style="list-style-type: none"> - All targets except one on acute pollution are measurable and quantified - Targets refer to the relevant EU and RSC standards - Targets are time bound - Targets lack details (e.g. contaminants concerned, definition of the terms “reduce” (target 8b) and “minimised” (target 8d)) and are not very ambitious (e.g. less stringent target than OSPAR EcoQO).
D9	+	<ul style="list-style-type: none"> - Only set at descriptor level (verbatim copy of Descriptor 9 from Annex I) - The GES definition in Annex I of the MSFD refers to EU legislation and is thereby sufficient - As the Dutch GES definition is not further specified at the level of criterion and 	++	<ul style="list-style-type: none"> - Information on monitored substances provided - No conclusive judgement made but it can be inferred directly from the GES definition 	+	<ul style="list-style-type: none"> - Targets and indicators are specific and potentially measurable - No threshold values for indicators - Achievement of targets cannot be determined due to the lack of thresholds.

	GES		Initial assessment		Targets	
	Assessment	Criteria	Assessment	Criteria	Assessment	Criteria
		indicators, it cannot be considered as fully adequate.				
D10	-	<ul style="list-style-type: none"> - The GES definition provided by NL has been developed further than the text provided in Annex I - The GES does not contain sufficiently specified thresholds and baselines to determine at what point GES is achieved. 	+	<ul style="list-style-type: none"> - Some quantitative data on the level of pressure - Sources of litter identified - Some information on trends - Impacts of marine litter in the Dutch Marine waters is not specifically addressed, only general information on impacts is provided (ingestion and strangulation) 	+	<ul style="list-style-type: none"> - Targets only provide a general objective to reduce litter on beaches and in marine organisms - Targets do not show a high level of ambition
D11	-	<ul style="list-style-type: none"> - The GES definition provided by NL has been developed further than the text provided in Annex I - The GES does not contain sufficiently specified thresholds and baselines to determine at what point GES is achieved. 	-	<ul style="list-style-type: none"> - Only qualitative data provided - Very little of the provided information is specific to the Netherlands 	-	<ul style="list-style-type: none"> - Targets do not address impacts - Targets not defined - More data is needed

Section 3. D1, D4 and D6 (Biodiversity)

I. Good Environmental Status (GES)

The Netherlands have combined D1, D4 & D6 together with D3. In this section, the three 'biodiversity' descriptors are considered together in terms of GES. For D3, see section 5.

GES definition (reporting sheets and paper report):

D1. Biological diversity is maintained. The quality and occurrence of habitats and the distribution and abundance of species are in line with prevailing physiographic, geographic and climate conditions

D4: All elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity.

D6: Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected.

The Netherlands (the NL) have set GES for Descriptors 1, 4 and 6 only at descriptor level in both the reporting sheets and the paper report. The NL definitions simply reproduce the Directive definitions in Annex I, hence there is no thresholds, reference conditions or baseline. The NL links its definition of GES to its setting of targets. The criteria from the Commission Decision are not used to define GES but to set targets. No alternative criteria/indicators are presented.

In the accompanying text to its GES definition, the NL gives a general description of current policy, pressures, and feasibility of achieving GES under current circumstances. In terms of policy, it refers to specification of the Birds and Habitats Directive and policy initiated pursuant to the Conservation Plan for the Harbour Porpoise.

The NL makes a judgement on the current status of the marine ecosystem considered as a whole as not good enough to guarantee its structure and functions and conclude to the need to focus on a revised CFP and to introduce additional seabed protection in the Frisian Front and the Central Oyster Grounds in order to reverse the downward tide in 2020 even if it is expected that GES will not be reached by then and possibly even not in 2027 (paper report, p.81-82).

The reporting sheet indicates that GES covers all bird, fish and mammal species, but it seems that cephalopods and reptiles are not covered. It is likely that the latter is not applicable in this region.

With regard to D1, no predominant habitats, special or other habitats are specified in the definition of GES and the assumption is made that GES definition applies to all seabed habitats in the assessment table of the reporting sheet, which would suggest that water column habitats are not included. Despite this, no GES for these predominant habitats/special habitats /other habitats groups is given and no reference is given to the definition of GES addressing special/listed habitats and species (of Habitats and Birds Directives and relevant international agreements). The accompanying text in the paper report does refer to the ecosystem structure but with a single sentence describing the current situation. No mention is made about the composition and proportion of predominant habitats and species/functional groups within the ecosystem. In relation to D4, no reference is made to species which could be used as indicators of changes in the food web and, with regard to D6, no reference is made to relevant biogenic structure, nor to any relevant substrate types.

In general there is a clear lack of specification of what is meant by various general concepts included in the GES definitions (e.g. prevailing physiographic, geographic and climatic conditions, normal

abundance, diversity and levels, levels that ensure that the structure and functions of the ecosystems are safeguarded). However, the NL acknowledges that 'good environmental status cannot be clearly defined at the level of the ecosystem as a coherent whole, because it cannot be compared to a situation in which the system was (relatively) undisturbed'¹.

The definition of GES does not reflect the definitions for Favourable Conservation Status under the Habitats Directive and for Good Ecological Status under the Water Framework Directive. GES is determined at the level of the whole Dutch part of the North Sea² which is considered as a suitable ecological-relevant scale.

Conclusion on adequacy: Overall the definition of GES does not meet the minimum requirements and is assessed as *inadequate*. The GES definition for D1, D4 and D6 is only set at the descriptor level and merely reproduces the Directive. No information is provided about baselines or reference points to assess progress towards GES. No reference is made in the BHD or WFD definitions or to any OSPAR EcoQOs.

II. Initial assessment

2.1 Pressure and impacts

The main type and causes of physical loss have been identified and the impact and level of the pressure appears to be well known and documented through the PlanMer (Strategic Environmental Assessment Statement) and appropriate assessment of the National Water Plan. These are the construction of Maasvlakte 2 and the 'Sand Motor' (also known as the Sand Engine) off the coast of Zuid-Holland. Physical loss is noted a pressure on shallow sand habitats but other features are not considered or discussed. It is unclear as to whether this is the only habitat which is affected by this pressure. Some limited indication of the geographical area where this pressure occurs is given.

Information on the level and impact of the pressure is given and appears adequate in the light of the available information.

The main type and causes of physical damage have been identified but only in terms of the amount of sand extraction and supply and from bottom trawling fisheries. But no real assessment is given as to the impacts of physical damage. The NL have indicated that they intend to gather knowledge about the effects of the primary disturbances, including bottom trawling, and about how these effects and possible cumulative effects can be identified in the different habitats and species. Other causes (land reclamation and coastal defence construction) are mentioned although the level of pressures and impact from these are not considered. Physical damage is noted a pressure on five habitats but other features are not considered or discussed. The indication of the geographical area where this pressure occurs is provided.

Information on the level of the pressure is given and appears adequate in the light of the available information. However no judgement is made as to the level and impact of the pressure. The NL only refers to other policies documents (Water Framework Directive, Habitats and Birds Directives, EIAs) which do not offer a judgement on the level of the pressure either.

Conclusion on adequacy: The assessment of physical loss and physical damage by the NL is considered *partially adequate*. On pressures and impacts, other features than shallow sand habitats are not considered with regard to physical loss and there is no judgement as to the pressure and impact of physical damage. The indication of the geographical area where the pressures occur is provided as is the proportion of the features impacted.

¹ MarieneStrategieNoordzeeEng102_PDF.pdf, page 82, paragraph 3.4.1

² Response on Main Issues Completeness Check, 25 April 2013

2.2 Biological features

Habitat types

Although it is stated that an assessment for habitat types has been carried out, only some habitat types have been included, i.e. shallow and shelf seabed, shelf waters. Littoral and intertidal habitats and coastal waters are not included.

The classification used by the NL in its paper report is based on the EUNIS level 3 classification, adapted to the Dutch part of the North Sea. In the paper report, the NL assesses four predominant habitat types (shallow fine sand, mid-depth mixed sand, deep fine and coarse sand and deep silty seabed) and three special habitats (Frisian Front, Klaver Bank and Dogger Bank). In the reporting sheet, only four predominant habitats are considered for the assessment (all seabed, none water column) and no individual habitats. The lack of information on other predominant habitats is justified by the fact that some have been reported as part of the seabed habitats and/or under physical features (in particular for marine waters: coastal and shelf). In the reporting sheet the NL has reported its Klaver Bank special area of conservation as a surrogate for the MSFD type “Shelf sublittoral coarse sediment” and indicates that it also relates to the MSFD type “Marine water: shelf”. It has also reported its Frisian Front/Oyster Grounds special areas of conservation as surrogate for the MSFD type “Shelf sublittoral mixed sediment” indicating that they also relate to the MSFD type “Marine water: shelf”. The NL specifies that the habitat types “deep, fine and coarse sand” and “mid-depth mixed sand” in the paper report have been combined in the reporting sheet in order to match the predominant habitat type “shelf sublittoral sand” from the CSWP 2011.

The NL specifies that certain ‘special habitats types’, which have been identified as Natura 2000 areas because of the special ecological importance at European level, will be reported under the Habitats Directive in 2013. These are the Dogger Bank, the Frisian Front, the Noordzeekustzone, the Voordelta, the Vlakte van Raan and the Klaverbank.

It should also be noted that in its paper report, the NL reports separately on plankton (phytoplankton and zooplankton) and on benthic communities. While no information is reported on plankton in the reporting sheet, information regarding benthic communities is integrated into the various assessments of predominant habitat types.

For those habitat types reported, the NL provides a description of the habitat distribution, extent and condition. The descriptions contain a certain number of quantitative information, in particular regarding the extent of the habitat. It also provides an indication of the state of the habitat in comparison with natural physiographic, geographic and climatic conditions. For all four predominant habitats reported, the habitat distribution and extent are reported to be in line with natural conditions, while the habitat condition is reported to be altered. The main pressures and human activities causing the pressures and the impacts of these pressures on the habitat types have been described in detail for each predominant habitat. No qualitative or quantitative judgement on status or on the trend in status of the habitat types has been made.

The NL provides a detailed account of the knowledge gaps regarding the ecosystem status of the North Sea. One of these concerns the extension and division of current indicators for benthic communities into habitat types distinguished within the MSFD and the HD. In terms of future plans addressing the gaps in knowledge and reporting, while none is reported in the reporting sheet directly, the NL has provided more information in its response to the completeness assessment. In particular, the NL mentions that the setting of targets and indicators specifically on habitats, and subsequent monitoring of these targets and indicators, will allow the NL to make an improved assessment for the next reporting cycle. In addition, the NL mentions the work done with OSPAR to develop common indicators and prepare an intermediate assessment by 2017.

Species/functional groups

The NL has reported on species/functional groups at the level of the species group (birds, fish and marine mammals). The NL justifies not reporting on cephalopods in its response to the completeness assessment by stating that there are no significant populations of cephalopods in the Dutch part of the North Sea apart from incidental influx from the Channel. It has therefore not been considered in any existing assessment, which is the reason why it is not covered in the initial assessment. However, the NL mentions that the species group will be part of future assessment and depending on the status, may be addressed with a target/indicator in the revision of targets and indicators in 2018. Reptiles are not included in the assessment because they are not relevant for the Dutch marine waters.

In its description of the species group composition, the NL provides information on specific species included in its assessment. The reference to functional groups is only done for fish species (demersal/pelagic/diadromous/elasmobranch) but they are not reported on separately. In its description of the groups' relative abundance and/or biomass, the NL provides quantitative information only for marine mammals and only for two species (grey seals and harbour porpoise). The information for fish and birds is qualitative and includes some qualitative trends. The NL provides a negative assessment of the state of the groups' condition and relative abundance in comparison to natural conditions. The main pressures on the species groups have been identified but they are described in less detail than for habitat types. For all three groups, these two parameters are assessed as altered. In the reporting sheet, no qualitative or quantitative judgement on status or on the trend in status of the species groups has been made. In the paper report, however, an assessment is made of the conservation status of certain birds and mammals (reference to BHD and OSPAR EcoQO on oiled birds) and of the status of certain fish stocks in relation to MSY.

Species which deserve protection under other international conventions and RSC are acknowledged in the overview reporting sheet but they are not specifically listed. The NL states that species listed under the BHD will be reported under those directives in 2013 and mentions that all species listed by OSPAR and relevant to the Dutch part of the North Sea are also listed under the Bird directive and therefore will be reported under that directive in 2013. Finally, the NL mentions that information regarding the species covered by the Common Fisheries Policy will be provided under this policy.

An on-going consideration for the next few years is that insights at ecosystem level and at species and habitat level within the MSFD and BHD framework continue to tie in with each other. As announced in the letter dated 14 September 2011, the Natura 2000 target document will be evaluated in 2015, based in part on the assessment of the favourable conservation status. This will be based on the latest insights in the functioning of the ecosystem coming from the international implementation of the MSFD.

Ecosystems

In the reporting sheet, the NL has reported on the North Sea ecosystem. The NL specifies that the entire Dutch part of the North Sea has been identified as a single ecosystem. It provides a limited description of the ecosystem structure and its functioning in relation to the proportion of selected species at the top of the food webs (although it only mentions large fish), with quantitative trends on the populations of large fish. A detailed assessment of the main pressures on the ecosystem has been made, referring to all the relevant pressures (fisheries, major hydrographical interventions, NIS, contaminants and nutrients, litter and noise). A judgement of the current status of ecosystems structure, productivity and functioning (abundance/distribution of key trophic groups/species) has not been made. A negative quantitative judgement has been made for the proportion of species at the top of food webs, referring to the OSPAR EcoQO on the proportion of large fish in the fish community. However, the NL does not make a conclusive judgement in relation to GES.

The NL mentions that knowledge gaps have been identified in the course of this reporting exercise and refers for instance to the lack of historical data, the consequences of human use in the past, the effects of the primary disturbances, including bottom trawling fisheries, and how these effects and possible cumulative effects can be identified in the different habitats and species. In terms of future plans, the

NL refers to the necessity to develop indicators, in particular for this combined “descriptor” (it is assumed that NL refers here to ecosystems), also in conjunction with the development needs of the BHD. The NL ties in the implementation of the MSFD and of the BHD to explain how insights into ecosystem, species and habitat assessments will improve over the next few years. The objective of the 2017 OSPAR Interim Assessment is referred to once again.

Conclusion on adequacy: The assessment of biological features for Descriptors 1 and 6 by the NL is considered *adequate* while for Descriptor 4 it is considered *partially adequate*. The assessment of features has identified the relevant predominant habitats, species groups and ecosystems for the NL. The reporting of habitat types is done at a sufficient level of detail while the reporting at species group level and at ecosystem level is rather limited. For all feature types, no judgement has been made in the reporting sheet on the status of the features in relation to GES but the NL provides systematically an assessment of the status of the features’ characteristics (e.g. habitat condition) in relation to natural physiographic, geographic and climatic conditions, which is in line with their GES definition. Assessments of status are also provided for certain species in the paper report on the basis of European or regional standards (MSY, FCS). Finally, the NL does provide an aggregated judgement on the current (not good) status of the whole marine ecosystem in its approach to defining GES. In the case of food webs, the NL refers to top predators but only in reference to large fish using the OSPAR EcoQO for large fish, which is not sufficient to cover the food web as a whole. Also no judgement has been made of the status for ecosystem functions such as productivity and structure.

III. Environmental targets

The NL has set up targets that cover several descriptors. The targets below are those relevant for D1, D4 and D6 although they may also cover other descriptors at the same time.

Environmental targets (reporting sheets and paper report):

Target 1 (D1, D4, D6): The interim target for 2020 is to reverse the trend of degradation of the marine ecosystem due to damage to seabed habitat and to biodiversity towards a development of recovery. This constitutes a first step towards a situation in which the marine ecosystem in the Dutch part of the North Sea can (in part) recover in the long term. The future perspective is a structure in which the relative proportions of the ecosystem components (habitats and species) are in line with those of prevailing physiographic, geographic and climatic conditions.

Target 1a (D1, D6): Improvement of the size, quality and distribution of populations of long-living and/or vulnerable (i.e. sensitive to physical disturbance) benthic species.

Associated indicator 1a (criteria 1.1, 1.2, 1.3, 1.6 and 6.2): Aggregated indicators for distribution, occurrence and condition of exponents of long-living benthos species and biogenic structures sensitive to seabed disturbance

Target 1b (D1 & 4, criteria 1.1, 1.2, 1.3, 4.1, 4.3): Improvement of the size, quality and distribution of populations of vulnerable fish species, in so far as deterioration was caused by human activity. This includes fish species with a long-term negative trend in population size and fish species with a low reproductive capacity (i.e. skates, rays and sharks). As regards improving the status of the Habitats Directive species, the targets are in line with the national targets of the Habitats Directive.

Associated indicator 1b (criteria 1.1, 1.2, 1.3, 4.3): Size distribution of fish stocks, of both commercially exploited and vulnerable species. For each species, the 95% percentile of the fish length distribution observed in surveys by research ships.

Associated indicator 1b (criteria 1.1, 1.2, 1.3, 4.3): Aggregated indicators for population size, distribution and condition of sharks, skates and rays, fish species with a long-term negative trend and migratory fish

Target 1e (D1, criteria 1.1, 1.2, 1.3): Minimisation and, eventually, elimination of discards from fishing

Associated indicator 1b (criteria 4.3): Fisheries discards

Target 1f (D1 & 4, criteria 1.1, 1.2, 1.3, 4.1 and 4.3): The targets for Birds Directive species are in line with the national targets of the Birds Directive. For pelagic seabirds for which the Dutch part of the North Sea is important, but no BD areas are designated, the aim is to attain a favourable conservation status at the regional

scale. For species for which this is relevant the decrease in food availability resulting from lessening fisheries discards and decreasing eutrophication are taken into account.

Associated indicator 1f (criteria 1.1, 1.2, 1.3, 4.1 and 4.3): Distribution, population size, condition and future perspectives of populations of vulnerable bird species and the quality of the habitat

Target 1g (D1 & 4, criteria 1.1, 1.2, 1.3, 4.1 and 4.3): The targets for marine mammals covered by the Habitats Directive (harbour seal, grey seal and harbour porpoise) are the same as the national targets pursuant to the Habitats Directive

Associated indicator 1g (criteria 1.1, 1.2, 1.3, 4.1 and 4.3): Distribution, population size, condition and future perspectives of populations of marine mammals and the quality of the habitat

Target 1h (D1): The demographic characteristics of fish, birds and marine mammals populations are indicative of resilient populations in terms of, for instance, natural size and age groups, male/female ratio, reproduction and mortality. Sub-targets c and d contribute to this subtarget for commercially exploited fish species.

Associated indicator 1h: Target is addressed with indicators 1a, 1b, 1f, 1g

Target 1i (D4, criteria 4.1, 4.2, 4.3, 1.7): The effect of human interventions on interactions between the different trophic levels in the food web is being reduced where problems are identified.

Associated indicator 1i (criteria 1.7, 4.2): Indicators for seabirds, marine mammals, and sharks, rays and skates as top predators are addressed with indicators 1b, 1f, 1g

Associated indicator 1i (criteria 1.7, 4.2): Food relationships of key species (e.g. common scoter - *Spisula*; Sandwich tern - sand eel/sprat/greater sand eel; harbour porpoise - sprat).

Associated indicator 1i (criteria 1.7, 4.2): Share of large fish in beam trawler catches of benthic species (IBTS): length-frequency distribution

Target 1h (D1, criteria 1.4 & 1.5): The distribution and population size of predominant habitat types remains more or less the same (i.e. within the limits of natural variation at EUNIS level 3)

Associated indicator 1h (criteria 1.4 & 1.5): Distribution and size of common habitats (EUNIS level 3) and habitats under the Habitats Directive

Target 1k (D1, criteria 1.4, 1.5 & 1.6): For the special habitat types protected under the Habitats Directive the national targets of the Habitats Directive apply

Associated indicator 1k (criteria 6.1. & 1.6): Seabed area that is not disturbed

Target 1l (D1, criterion 1.6): Supplementary, improvement of the quality of the deeper, silty parts and deeper, non-dynamic sandy seabeds in the Dutch part of the North Sea. The quality of the habitats applies to the physical structure, ecological function and diversity and structure of the associated species communities.

Associated indicator 1l (criterion 1.6): Indices for the composition of benthic communities

Target 1m (D1 & 6, criteria 1.6 and 6.1): 10-15% of the seabed of the Dutch part of the North Sea is not appreciably disrupted by human activities

Associated target 1m (criterion 1.6): Indicators for the quality of the different habitats at EUNIS level 3

The NL has set up targets that cover several descriptors at the same time. Therefore, the adequacy of the targets is considered in combination for D1, D4 and D6. The twelve targets and associated indicators relevant to D1, D4 and D6 cover all criteria for D1, 4 and 6 from the Commission Decision. There are no conflicting targets or associated indicators and all are consistent as a set.

All targets and indicators that have been established for the marine ecosystem, apply to all habitats, unless otherwise stated. With regard to the coverage of species, the NL opted to report on species-group level rather than on the level of functional group or species. However, some of the targets/indicators are on the level of individual species or functional groups, in particular those relating to other policy or developed in OSPAR context. For example for marine mammals there are specific national targets pursuant to the Habitats Directive for grey seal, common seal and harbour porpoise (target 1g), for birds there are national targets under the Birds Directive (target 1f). The species group 'cephalopods' is not covered by targets/indicators as there are no significant populations in the Dutch part of the North Sea and they have not been considered in the initial assessment. The NL has noted

that this group will be part of future assessment and depending on the status, may be addressed with a target/indicator in the revision of targets and indicators in 2018.

The targets have a time frame for achievement and are measurable in most cases. The baseline for most of the targets is the current state although it is unclear how this relates to the 2012 initial assessment. Some targets are not specific and relate to a trend (*improvement, reversal of trend, remains the same*), rather than setting a specific target level. These are generally interim targets. This is also linked to the general lack of knowledge identified by the NL as to exactly determine GES or to establish a link between the disturbances and good environmental status, environmental targets and measures. The NL has pointed out that the interim targets indicate the desired direction in a qualitative manner, while more knowledge is being gathered.

No thresholds or reference points are given, however the justification for this is well explained by the NL. No quantitative thresholds have been provided for those targets, where the associated indicators are still under development (targets 1a, 1b, 1e, 1f, 1g, 1i, 1j, 1k and 1m). For those targets which refer to existing targets under other policies, the thresholds are not repeated but apply. This is the case for target 1l (Water Framework Directive) and targets 1b, 1f, 1g and 1k (Birds and Habitats Directives).

Most targets are state targets. The pressure targets are general and not specific. The only pressure targets are for fisheries and fisheries discards and two impact targets are given relating to human interactions of foodwebs and on sea floor integrity. Other specific pressures or impacts are not implied in the state targets. One target (1m) however is very general and refers to all 'human activities' which could cover all pressures and impacts. It is however an interim target and is not specific.

Conclusion on adequacy: The set of targets and associated indicators defined by the NL for biodiversity is considered *partially adequate*. None of the targets are fully SMART, although they are potentially measurable, so it is not possible to determine whether they are achievable or realistic. Most associated indicators are still under development. The targets are not sufficiently ambitious to reduce the pressures or impacts to levels that will achieve GES because they do not directly address all relevant pressures and impacts, the majority of the targets being state targets. However, the NL has offered a detailed justification for the approach chosen which appears to be pragmatic and realistic. It has provided indications of how it will address the gaps, in particular through the continuing development of indicators within OSPAR, in order to be able to address gaps in the next reporting cycle and therefore make the targets more operational.

IV. Consistency

In its assessment of pressures and features related to the biodiversity descriptors, the NL has identified in general the relevant elements to be assessed even if it remains rather limited. In addition, it has systematically assessed the status of these habitats in relation to natural physiographic, geographic and climate conditions. As this is in line with their GES definition, it could seem inconsistent that the NL has decided not to make a judgement on the status of the features in relation to GES. However, the NL has justified this by mentioning that the initial assessment has been done before the GES for D1, 4 and 6 was defined (see comments on this approach in Section 1).

The collective set of targets defined by the NL is unlikely to lead to a reduction in all the identified pressures/ impacts, given that they are mostly state targets and that pressures and impacts are not all covered (or in a very unspecific way through one general target applying to all human activities). As the current status of all the main biodiversity components (functional groups and predominant habitats or their surrogate species and biotopes) has not been clearly determined, it is not possible to evaluate whether all these components that have been judged as "not good status" in the initial assessment are covered.

Section 4. Descriptor 2 (Non-indigenous species)

I. Good Environmental Status (GES)

GES definition (reporting sheets and paper report):

D2. Non-indigenous species (exotic species) introduced by human activity occur at a level at which the ecosystem does not change.

The Netherlands (NL) has set GES for Descriptor 2 only at descriptor level in both the reporting sheets and the paper report. The Dutch GES definitions simply reproduce the Directive definitions in Annex I, with one addition ‘exotic species’ which is used as a synonym of non-indigenous species. The addition of the term “exotic species” does not alter the meaning of the GES. The GES definition does not meet the minimum requirements (no further increase of NIS which has an adverse effect on the ecosystem, i.e. no new introductions of NIS, and where possible no further spread of NIS). It does not provide any information on specific vectors or NIS.

There is no threshold, reference condition or baseline. The NL links the definition of GES to the setting of targets. The criteria from the Commission Decision are not used to define GES but to set targets. No alternative criteria/indicators are presented.

In the text accompanying its GES definition, the NL gives a general description of current policies, pressures, and the feasibility of achieving GES under current circumstances. In terms of policy, it refers to a policy document on invasive NIS, the IMO Ballast Water Convention, the establishment of conditions for the Nature Conservation Act permits for the transfer of living shellfish to Natura 2000 areas and the development of a Policy line on shellfish transfers. Finally, it also mentions that the IMO guidelines to prevent the import of NIS by commercial and recreational vessels are through voluntary measures.

The NL note that, considering that the effects of NIS on the ecosystem that have occurred in the past will remain achieving GES is equivalent to the aim of not allowing the ecosystem to change any further. This results in an overall objective to minimise the risk of new introductions (paper report, p.86).

Conclusion on adequacy: The Dutch GES definition for Descriptor 2 is assessed as *inadequate*. The GES is defined only at the descriptor level, not at the criteria level. The GES definition merely reproduces the Directive Annex I. No information is provided about baselines or reference points to assess progress towards GES.

II. Initial Assessment

The Netherlands lists 47 NIS present in the Dutch part of the North Sea, out of which 16 are known to be harmful to the ecosystem. Particular note is made of the Atlantic jackknife clam (*Ensis directus*) and the Pacific oyster (*Crassostrea gigas*), which are identified as the two main invasive NIS in the area. The Dutch list of NIS counts more species than the DAISIE (Delivering Alien Invasive Species Inventories for Europe) list. While there are no formal lists drawn by OSPAR, ICES produced a list which identifies 30 NIS that have had adverse impacts on ecosystems or human health within the OSPAR area. The Dutch list is also longer compared to the ICES list.

Conclusion on adequacy: The initial assessment carried out by the NL on the introduction of non-indigenous species is considered to be *partially adequate*. The relevant NIS are covered in the report; the impacts on functional groups are described, but in a very general way. The NL could give some

more detail here on e.g. which indigenous functional groups are exactly at risk by the introductions. Pathways are mentioned for each introduced species, and there is enough focus in the text on pathways. The relevant geographical areas are covered. However, the NL has not made a judgement on the level of and impact from this pressure. The lack of judgement is justified by insufficient monitoring data and lack of established assessment methods but does not propose plans to address this gap.

III. Environmental targets

Environmental targets (reporting sheet and paper report):

Target. Minimise the risk of new introductions of NIS.

Associated Indicator 1: the number of invasive exotic species present

Associated Indicator 2: the number of new, invasive exotic species a year

Associated Indicator 3: the ratio between a) abundance or biomass of invasive exotic species and b) abundance or biomass of indigenous species for a selection of specific species groups (e.g. phytoplankton, macrobenthos, fish) in Natura 2000 areas.

The NL has specified one target (and three associated indicators) for Descriptor 2 which is to minimise the risk of new introductions of NIS. The baseline is the current state. In principle it would be adequate to prevent the introduction of NIS in order to achieve GES, but the question is how to measure that there are no new introductions. This requires a complex early warning system and a plan on measures to be taken if introductions are identified. This should be addressed by the target, together with indicators which can be used to determine whether there are new introductions or not. The Indicator 3 targets specific species groups with some examples given (phytoplankton, macrobenthos, fish).

In general, the target and associated indicators are not specific enough as it does not cover identified sources of introduction. The target is time-bound (June 2020), but appears very difficult to measure without further specification, in particular it is not clear to what extent the risk should be minimised. . It is realistic. The NL indicates in the reporting sheet that all indicators need further development and are expected to be operational only by 2018.

The target and associated indicators are not sufficiently targeted towards reducing levels of a specified pressure or impact, or controlling human activities, which are preventing GES from being achieved, as it is not explicit enough. In particular, it does not cover all the main sources of new introductions e.g. aquaculture.

The target is not ambitious enough in light of the minimum requirements which entail 'no new introduction'. Further spreading of NIS is not covered.

Conclusion on adequacy: The target and associated indicators are assessed as *inadequate* as they do not cover all the main sources of introduction. The target is not specific enough to be measurable and not ambitious as it only refers to a reduction of risk.

IV. Consistency

The assessment of the pressure and its impact from NIS is consistent with the Dutch definition of GES. However, while the assessment has identified particular species and vectors/pathways, the definition of GES and the environmental target with its associated indicators remains very general.

The target is not considered as sufficient to achieve GES, which is by itself defined in a vague way. The targets relate directly to a reduction in the identified pressures/impacts but without any specification. In particular, no threshold has been set.

Section 5. Descriptor 3 (Commercial fish and shellfish)

I. Good Environmental Status (GES)

GES definition (reporting sheet and paper report):

D3. Populations of all commercially exploited fish and shellfish are within safe biological limits, exhibiting a population age and size distribution that is indicative of a healthy stock.

The NL has set GES for Descriptor 3 at the descriptor level reproducing verbatim the definition as provided in Annex I of the MSFD. The criteria and indicators as provided in the 2010 Commission Decision have not been applied for setting GES by the Netherlands.

In the paper report, the NL groups its definition of D3 with the definitions of D1, 4 and 6 on biodiversity. In the accompanying to the definitions of GES, the NL refers to existing policies. In the case of D3, it refers to the Common Fisheries Policy and lists the main principles underlying the CFP such as fishing at MSY levels. The NL estimates that it is likely that the CFP reform will not result in achieving GES by 2020 and possibly not even by 2027.

Conclusion on adequacy: the GES definition of the NL for Descriptor 3 is assessed as *inadequate*. The GES lacks criteria, indicators and thresholds and the descriptor reproduces verbatim the definition as provided in Annex I of the MSFD. The reference to the CFP in the accompanying text is not specific enough to compensate for the lack of specification of the GES definition.

II. Initial Assessment

The Dutch assessment on the level of fisheries pressure has been reported on in detail. The Dutch assessment reports on the level of pressure from fisheries by providing the number of vessels, fleet tonnage and fleet engine power for the different fleets. For fleets targeting fish the number of days at sea is also provided but this data is not available for the fleet targeting shellfish. Recreational fisheries are also described and it is indicated that a study on the impacts of sport fishing on species covered by a recovery plan such as cod is underway.

The assessment of impacts on fish stocks provides a general qualitative overview of the various impacts by fisheries as well as quantitative data. For fish stocks with quantitative stock assessments with reference points, 56-60% are indicated as being exploited at or below Fpa or Fmsy with the trend for the number of stocks being harvested at an acceptable level improving. For those species where a quantitative spawning stock assessment was available, it was found that 76-77% of those stocks are at or above SSBpa or SSBmsy-trigger with the number of stocks being within acceptable limits improving. The Netherlands has not concluded on the state of stocks in respect to the GES definition but do conclude that the SSBs for commercial fish stocks are not sufficient to achieve the targets.

The assessment of impacts from fisheries on other ecosystem components has been described both qualitatively as well as quantitatively. 50-75% of seabed habitats and 71% (10/14) of functional groups are indicated as being impacted by fisheries. The status of impacts from fisheries on the seabed is not assessed due to a lack of methods. In case of functional groups it is indicated that the OSPAR EcoQO is not met for the large fish indicator but the status of other functional groups are not mentioned and the status has not been assessed in respect to GES. It is concluded however that the target for large fish in the fish community has not been met.

Conclusion on adequacy: The analysis and assessment by the NL on the level of, and impact from, fisheries is considered as *adequate* in light of the available knowledge/ level of information/

established methods. The data is comprehensive and links the initial assessment to the targets although not to the GES definition. Additionally the inclusion of data on recreational fisheries is a specific strongpoint of the Dutch assessment.

III. Environmental targets

Environmental targets (reporting sheets and paper report):

Target 1b: Improvement of the size, quality and distribution of populations of vulnerable fish species, in so far as deterioration was caused by human activity. This includes fish species with a long-term negative trend in population size and fish species with a low reproductive capacity (i.e. skates, rays and sharks). As regards improving the status of the Habitats Directive species, the targets are in line with the national targets of the Habitats Directive. Subtargets c and d below apply to commercially exploited fish and shellfish covered by this description.

Associated Indicator: Aggregated indicators for population size, distribution and condition of sharks, skates and rays, fish species with a long-term negative trend and migratory fish

Associated Indicator: Size distribution of fish stocks, of both commercially exploited and vulnerable species. For each species, the 95% percentile of the fish length distribution observed in surveys by research ships.

Target 1c1: The fishing mortality rate (F) for all commercially exploited fish and shellfish stocks remains at the same level as or below the value of a Maximum Sustainable Yield, (MSY): $F \leq F_{msy}$

Associated Indicator: The primary indicator for fisheries pressure on commercially exploited fish stocks is the mortality of commercially caught fish ($=F$). If values for F are not available, the (change in) Catch per Unit of Effort can be taken as a starting point

Target 1c2: The target for depleted stocks of sharks, skates and rays fished by the EU fleet is recovery (or rebuilding) in line with the European Community Action Plan for the Conservation and Management of Sharks, Commission Decision 2009/40. This is a process target. Moreover, the target range not only depends on the Netherlands, but on many other countries as well.

Associated Indicator: Aggregated indicators for population size, distribution and condition of sharks, skates and rays, fish species with a long-term negative trend and migratory fish

Target 1d: The Spawning Stock Biomass (SSB) of commercially exploited fish and shellfish is above the precautionary level Bpa

Associated Indicator: The Spawning Stock Biomass (SSB of commercially caught fish)

Target 1e: Minimisation and, eventually, elimination of discards from fishing

Associated Indicator: Fisheries discards

Target 1h: The demographic characteristics of fish, birds and marine mammals populations are indicative of resilient populations in terms of, for instance, natural size and age groups, male/female ratio, reproduction and mortality. Sub-targets c and d contribute to this sub-target for commercially exploited fish species.

Associated Indicator: Target is addressed with indicators 1a, 1b, 1f, 1g.

The NL has defined 6 targets and 5 associated indicators that address fisheries and 2 targets that specifically target commercial fish stocks. Targets 1c1, is measurable and in line with the objectives of the Commission to exploit all stocks at or below F_{msy} . Target 1d is in line with the objectives of the Commission for stocks to be within safe biological limits but it should be explicitly stated that SSB should be at or above SSBpa for all commercially exploited fish and shellfish. Both indicator 3.1 and 3.2 are mentioned to be existing ICES indicators while for SSB there is also an aggregated OSPAR indicator which indicates the number of commercially exploited fish stocks that are at SSBpa. In the report it is mentioned that sufficient knowledge to calculate MSY levels is only available for a “handful” of species.

In regard to target 1e, it is not clear whether the minimization or elimination of discards needs to occur by 2020. In the former situation the target is not sufficiently clear on what minimisation implies and therefore not SMART.

Targets 1b, 1c2 and 1h apply to the biodiversity objectives of the NL but also to Descriptor 3. For the indicator “Size distribution of fish stocks, of both commercially exploited and vulnerable species. For each species, the 95% percentile of the fish length distribution observed in surveys by research ships” it is mentioned that there is an OSPAR indicator which will need to be revised to fit within the ICES context. For the indicator “Aggregated indicators for population size, distribution and condition of sharks, skates and rays, fish species with a long-term negative trend and migratory fish (Commission Decision, criteria 1.1, 1.2, 1.3 and 4.3)” it is stated that this indicator will need to be developed for commercially exploited fish species in the ICES framework and for non-commercially exploited fish in OSPAR. At this moment the targets 1b, 1c2 and 1h remain nonspecific and lack thresholds and baselines.

Conclusion on adequacy: The set of targets and indicators defined by the NL to cover D3 is considered *adequate*. Target 1c1 to exploit all stocks at F_{msy} is in line with the objectives of the Commission. Target 1d should be clearer that it applies to all stocks in order to be fully compliant with guidance from the Commission. Target 1e to minimise and eventually eliminate discards is a good practice and goes beyond the directive and Commission Decision. Targets 1b, 1c2 and 1h are relevant to Descriptor 3. As there is not yet clear guidance from the Commission for criterion 3.3 and its associated indicators, these targets are sufficient, considering the current knowledge available.

IV. Consistency

The GES definition for descriptor 3 of the NL is not sufficient; the targets however are in accordance with the Commission’s guidance for stocks to be exploited at or below F_{msy} and for stocks to have a SSB at least at or above SSB_{pa}. These conditions should however not only apply to the targets but should also be included as part of the GES definition to be in accordance with the Directive.

The initial assessment is thorough and specifically states that the current environment does not meet the conditions set out by the targets. This implies that GES is not achieved but this is not specifically stated. The current Dutch GES definition which is a verbatim reproduction of Annex I is not sufficient to determine what actually constitutes the achievement of GES.

Section 6. Descriptor 5 (Eutrophication)

I. Good Environmental Status (GES)

Definition of GES (reporting sheet and paper report):

D5. Human-induced eutrophication is minimised, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algae blooms and oxygen deficiency in bottom waters.

The NL has defined GES for Descriptor 5 only at descriptor level in both the reporting sheet and the paper report. The Dutch definition simply reproduces the Directive definition in Annex I of the MSFD. None of the criteria and indicators laid out for Descriptor 5 in the Commission Decision is incorporated in the GES definition and no justification is provided for doing so. Gaps in knowledge have not been identified, but a short text on current/initiated policy and on the attainability of GES is provided.

Even though relevant features impacted and pressures addressed are listed in the reporting sheet, they are not referred to in the definition itself or in the accompanying text in the paper report, making the list less useful. There is no reference to cumulative impacts. There is no direct mention of threshold values and baseline values for GES in the reporting sheet or paper report. Nonetheless, the environmental targets do refer to thresholds and baselines for some criteria, which means that some descriptor-level definitions must have been developed.

The paper report refers to implementation of the WFD River Basin Management Plans, but it does not explain how the WFD normative definitions of ecological status classifications are to be integrated into MSFD classifications of good environmental status. The achievement of the MSFD GES beyond 2020 is considered within reach, provided that the measures agreed (internationally) under the WFD for nutrients are implemented. In addition, implementation of the Nitrates Directive, Urban Wastewater Treatment Directive, the Directive on National Emission Ceilings for certain pollutants, the MARPOL Convention and the UNECE Convention on Long-range Transboundary Air Pollution are all mentioned (but not in detail). No reference is made to the OSPAR eutrophication strategy under Article 9, but a failure to meet relevant OSPAR thresholds is reported in the Initial Assessment.

The NL concludes that the fact that there are only a few eutrophication phenomena in the Dutch part of the North Sea shows that the existing policies are adequate (“on the right path”).

Conclusion on adequacy: the GES definition of the NL for D5 is assessed as *inadequate*. The GES definition is just a copy of the MSFD Annex I, and does not meet its minimum requirements, since it is not presented at criteria/indicator level and no quantitative baselines or thresholds are established. It is also not clearly explained how the definition of GES is integrated with WFD thresholds. Although it is inferred that achievement of GES is related to the achievement of existing policies, the lack of specification in the definition and the accompanying text makes it impossible to determine with certainty when GES is achieved.

II. Initial Assessment

The level of pressure of eutrophication and its impact on water column and seabed habitats are described. The proportion of the environment and habitats affected, as well as some trends, are provided. It is indicated that since 1990, nutrient load to the North Sea has fallen by 50% with regard to phosphorus and 20-40% with regard to nitrogen, resulting in decreases (albeit less dramatic) in marine nutrient concentrations. However, no nutrient budget appears to have been provided. Organic matter inputs and concentrations show no trends.

In the paper report eutrophication is referred to as being limited to coastal waters which is mainly due to the diffuse load from agriculture within the river basins discharging into the North Sea. Shipping is also mentioned in the paper report, while the reporting sheets list agriculture, forestry, urban discharges and industry instead.

No mention is made of the modelling of organic matter enrichment at the oyster beds area, to assess whether the low dissolved oxygen levels which occur there on a seasonal basis are due overwhelmingly to phytoplankton bloom collapses or whether a significant proportion of this is due to organic matter enrichment from land based sources. The situation is exacerbated by thermal stratification. It is also explained that water transparency is low, but the reason for this is primarily due to non-biogenic suspended particulate matter, rather than phytoplankton.

Because GES is inadequately defined, it has not been possible to make an initial assessment of trophic status (i.e. compliant/non-compliant) according to the MSFD Descriptor 5. Instead, the assessment refers directly to OSPAR and the WFD status, taking into account nutrient and chlorophyll concentrations (which are still considerably above OSPAR thresholds). Only 5-25% of the relevant geographical area is considered to be affected. The oxygen status of bottom waters is not problematic, albeit that WFD coastal water status is classified as moderate. In terms of impact, the status is considered stable, despite the reported reductions in pressures.

Conclusion on adequacy: the initial assessment of the NL for eutrophication is assessed as *partially adequate*. The initial assessment is mostly descriptive, referring to pressures and some trends, however, very little quantitative information is presented. Status is assessed but not in relation to GES definition.

III. Environmental targets

Environmental targets (reporting sheets and paper report):

Target 5a: Reduce the concentrations of nutrients where these do not meet the Water Framework Directive, pursuant to its timeline

Associated indicator: Nutrient levels: Area-specific average winter concentrations (December-February) of nutrients: dissolved inorganic nitrogen (DIN, an addition of nitrate, ammonium and nitrite) and phosphorus (DIP), respectively, do not exceed 50% above the background values (OSPAR). The nitrogen- phosphorus ratio can be derived from these concentrations, which is important to gain insight into the growth of toxic algae.

Target 5b: Algae biomass and blooms approximate 50% above the background value. The concentration of chlorophyll a during the phytoplankton growth season (March - September) that is consistent with good environmental status does not exceed 50% above the background value, in accordance with the Water Framework Directive (up to 1 nautical mile from the baseline) and OSPAR (beyond).

Associated indicator: Direct effects: Concentration of chlorophyll a during the phytoplankton growth season (March-September).

Target 5c: No increased occurrence of harmful algae blooms

Associated indicator: Indirect effects: Local oxygen deficiency in sedimentation areas and below massive harmful algae blooms.

Target 5d: No oxygen deficiency due to eutrophication

Associated indicator: Indirect effects: Local oxygen deficiency in sedimentation areas and below massive harmful algae blooms.

The NL has defined four targets and associated indicators to address Descriptor 5, which are the same in the reporting sheet and the paper report.

All of the targets are specific and measureable, but it is not known whether they are achievable and realistic by 2020, even though it appears that the NL is confident about that (e.g. bearing in mind the information presented in the Initial Assessment, Target 5b will be difficult to achieve). For target 5a a timescale clearly exists, but is only referred to, not reported. Targets 5b and 5c have no time-scale attached, apart from a generic MSFD timescale of achieving GES by 2020. It should be noted that a baseline is set for Target 5c in the reporting sheet (current state) but not in the paper report. Without a baseline, such a target would not be fully operational.

The targets are all sufficiently targeted towards reducing levels of impact. In fact, the targets are all impact-specific, rather than pressure-specific and are little more than criteria-based definitions of the GES for Descriptor 5, so failure to comply with the targets would mean an automatic failure to achieve GES and vice versa. Likewise, achievement of the targets would result in achievement of GES and vice versa. It is considered that the targets are sufficiently ambitious to reduce impact to levels that will achieve GES but achievement of the chlorophyll threshold is considered likely to be very challenging by 2020, even if pressures are reduced substantially further than they already have been in recent decades. Since all targets tackle impact there are no conflicts between them – overall the set of targets is consistent and coherent.

It should be noted that impacts on macrophytobenthos communities and on water transparency are not included in the set of targets/indicators. The WFD requires the development of phytobenthos thresholds for coastal waters, but there are no targets incorporated to adapt or achieve these for MSFD eutrophication purposes, even if no targets or thresholds are established for macrophytobenthos-related impacts in offshore waters.

In the accompanying text, the NL mentions that for the monitoring of progress, priority will be given to OSPAR COMP assessment approach over the WFD approach. Only in coastal areas up to 1 nautical mile will both approaches be applied and harmonized, following OSPAR's guidance. The NL mentions that the OSPAR COMP assessment uses two additional indicators to those set by the NL to cover D5: area-specific plankton species and changes in benthos/fish mortality. Since these indicators are monitored in the Dutch marine waters through the OSPAR COMP procedure, it is not clear why they were not included in the set of targets and indicators defined by the NL.

Conclusion on adequacy: the set of environmental targets and associated indicators defined by the NL for D5 is assessed as *partially adequate*. Although they are sufficiently ambitious and targeted to reduced levels of impact in order to achieve GES it is considered that it will be very challenging to achieve the chlorophyll threshold of target 5b by 2020. In addition, although the set of targets is consistent it lacks targets addressing impacts on macrophytobenthos communities and on water transparency. Finally, it is considered that the targets and associated indicators are little more than criteria-based definitions of GES for Descriptor 5 that would have been better reported under Article 9.

IV. Consistency

It is considered that the assessment of the impacts of eutrophication is consistent with the NL definition of GES (based on the assumption that the targets represent a criteria-level definition of GES with regard to Descriptor 5). However, the lack of nutrient budgeting in the NL makes it difficult to identify the relative importance of individual pressures or vectors of transport to the marine environment. No quantification of organic loading is provided, but since it is stated that both organic loading and concentrations are stable, data must be available.

The set of environmental targets and associated indicators defined for Descriptor 5 covers all the impacts related to Descriptor 5 identified in the initial assessment but not in terms of pressures, i.e. individual sources of nutrients (e.g. point vs. diffuse sources, or direct discharges vs. river loads), despite the long-term OSPAR objective of 50% nutrient reduction. Only impacts are addressed but in

order to meet the targets, eutrophication pressures would need to be reduced. Not only those pressures originating in the NL, but also those originating in other countries, which is acknowledged by NL.

The set of targets and associated indicators defined for Descriptor 5 is sufficient to achieve GES however, modelling results based on current policies and practices suggest that this will be very difficult to achieve by 2020 without additional measures, since predictions are that across the EU, nitrogen emissions will fall only slightly compared to recent levels.

Section 7. Descriptor 7 (Hydrographical conditions)

I. Good Environmental Status (GES)

Definition of GES (reporting sheet and paper report):

D7. Permanent alteration of hydrographical conditions does not harm the marine ecosystems.

The NL has defined GES for descriptor 7 only at descriptor level in both the reporting sheets and the paper report. None of the criteria and indicator laid out for Descriptor 7 in the Commission Decision is incorporated in the GES definition and there is no direct or indirect reference to them (e.g. spatial scale) or justification for this gap. The Dutch definition simply reproduces the Directive definition in Annex I (although slightly different in English, the wording used in the Dutch paper report is the same as that used in the Dutch version of the Directive).

In the text accompanying the GES definition, the NL refers to EU (Habitats and Birds Directive) and national policies and legislation already in place which have an relate to hydrographical conditions. In particular, it refers to the obligations to carry out EIAs (based on the EU requirements) in relation to sand extraction and sand suppletion. However, there is no reference to the WFD normative definitions of ecological status classifications for coastal waters (while it is mentioned in the initial assessment). There is no further specification of the characteristics that should be used to measure GES (e.g. spatial characterisation). There is no reference to links with other MSFD descriptors and to specific biological components addressed by the GES definition. Even though relevant features impacted and pressures addressed are listed in the reporting sheet, they are not referred to in the definition itself or in the accompanying text in the paper report, making the list less useful. There is no reference to cumulative impacts. Finally, there is no direct mention of threshold values and baseline values for GES in the reporting sheet or paper report.

The NL mentions the impacts of two national projects on the seabed ecosystem and diadromous fish species and refers to the OSPAR advice document on hydrographical properties to justify that the effects of these two projects can be considered irreversible considering the loss of invested capital and practical value a return to former conditions would entail. The NL concludes that GES is already achieved in relation hydrographical changes, that no new interventions have been planned that will negatively affect GES and that existing policies will guarantee the maintenance of GES.

Conclusion on adequacy: the GES definition of the NL for D7 is assessed as *inadequate*. GES is determined at descriptor level in a manner consistent with the Commission Decision, but the definition is a simple copy of the descriptor in MFSD Annex 1. There is no justification for not having criteria or indicators defined and there is no reference to the WFD relevant definitions of ecological status classifications or to the OSPAR approach for the characterization of GES for D7. The GES definition is not specific enough (no mention to space or time scale, habitats or ecosystems) and some parameters which could be relevant from the initial assessment are not considered (e.g. turbidity). The inclusion of socio-economic considerations in the definition of GES is not adequate, however using the current situation as a baseline for GES is in line with Commission guidance. Since the NL considers that GES is already achieved, it could be inferred that the characteristics of GES are the same as those that describe the current situation (in the initial assessment). But no independent state parameters are included in the GES definition (or the accompanying text), which would allow to assess whether GES is achieved/maintained (whatever the outcomes of the initial assessment).

II. Initial assessment

The level of pressure of permanent hydrographical alterations and their impact on water column and seabed habitats are described and two large-scale projects are specifically referred to: the Delta Project (flood protection) and the Maasvlakte I (port extension). The proportion of the environment and habitats affected, trends and status assessment have all been provided. The impact on one functional group – Diadromous fish – is mentioned as well as the impact on one habitat type – H1110A/B. Land claim defence, sand and gravel mining and dredging are referred to as the main causes for hydrographical changes in the reporting sheet and the paper report looks specifically at sand extraction, sand suppletion and dredging.

Assuming that negative effects as a result of permanent changes are irreversible, the NL considers that GES has already been achieved since the current policy will guarantee the maintenance of the present state in case of new activities. Since no thresholds have been defined, this assessment of status is merely qualitative. It is considered that there is no significant ecological impact due to permanent hydrographical changes, in line with the Environmental Impact Assessments that have been carried out and the requirements of the Water Framework Directive, the Birds Directive and the Habitats Directive. No reference is provided to OSPAR QSR 2010, but the assessment seems consistent with chapter 12 Region II (Greater North Sea).

The Netherlands has also reported on the level of pressure of marine acidification, though not in detail, specifying only which habitats and what proportion of these habitats is impacted.

Conclusion on adequacy: the initial assessment of the NL for pressure 7 is assessed as *adequate*. The initial assessment includes reports on pressures and trends. It also refers to and evaluates the relevant changes, as well as the level of their impact (considered not significant), which is consistent with the changes (nature, scale) reported, the WFD reports and with OSPAR QSR.

III. Environmental targets

Environmental targets (reporting sheets and paper report):

Target 7a: Human activities do not result in permanent, large-scale negative effects on the ecosystem due to changes in the hydrographical conditions (Commission Decision, criteria 7.1 and 7.2).

Associated indicator: the size of the affected (benthic) area (Commission Decision, criterion 7.1)

Associated indicator: the size of permanently altered habitat types (Commission Decision, criterion 7.1)

Associated indicator: changed functions of habitats (for spawning/reproduction, resting, foraging and migration of species) (Commission Decision, criterion 7.2).

Target 7b – Operational target: All developments must comply with the existing regulatory regime (e.g. EIA, SEA, and Habitats Directive) and regulatory assessments must take into consideration any potential impacts arising from permanent changes in hydrographical conditions, including cumulative effects, at the most appropriate spatial scales following the guidance prepared to this end (EUNIS level 3, reference year 2008).

While the targets reported by the NL in the reporting sheet and the paper report are the same, the indicators have a slightly different wording in that the term “scope” is used in the reporting sheets while the term “size” is used in the paper report (in both languages). It is not clear why the two terms are used. In the Dutch version of the paper report, the term “size” is used and therefore considered to be the correct terminology for the set of targets/indicators for D7.

In the paper report, the second target is labelled “operational”, which is explained by the fact that it relates to the concrete implementation of existing regulatory requirements. This second target is directly targeted to reducing impacts of human activities, provided they are submitted to regulation

and sufficiently ambitious to reduce the pressure or impact to levels that will achieve (or in the case of the NL maintain) GES.

The first target however is not considered SMART. The indicators defined are those from the Commission Decision and they are not further specified in terms of threshold values or baselines/reference points or in terms of the specific ecosystem components addressed. Such a target cannot help monitor progress towards achieving/maintaining GES. The NL acknowledges that it cannot formulate quantitative targets for this descriptor

There are no conflicts between the objectives of both targets. They both relate to reducing impacts from human activities.

Conclusion on adequacy: the set of environmental targets and associated indicators defined by the NL for D7 is assessed as *adequate*. Target 7a is a mere reformulation of the definition of GES and from the Commission Decision. Target 7b, however, is considered to be a SMART target, directly targeted and sufficiently ambitious to reduce impacts to level that will achieve/maintain GES.

IV. Consistency

The assessment of the pressure and its impact is consistent with the NL definition of GES (mostly because the definition of GES is not specific enough).

All pressures (provided that they are covered by an adequate regulatory regime) as well as all impacts (project level/cumulative) are covered by the targets; however, it appears that the targets are only applicable to *new* projects (“developments”) and not to existing activities, which is consistent with the definition of GES. The set of targets is considered as sufficient to achieve GES, since it seems that the waters are already considered to be at GES and that any significant degradation would be prevented through these targets.

Section 8. Descriptor 8 (Contaminants)

I. Good Environmental Status (GES)

GES definition (reporting sheet and paper report):

D8. Concentrations of contaminants are at levels not giving rise to pollution effects.

The NL has set GES for Descriptor 8 only at descriptor level in both the reporting sheets and the paper report. In the reporting sheet, the NL acknowledges that GES has been set only at Descriptor level. In the paper report, the NL reports the two criteria defined in the Commission Decision “concentration of contaminants” and “effects of contaminants” but without specifying these further. The NL links its definition of GES to its setting of targets. The criteria from the Commission Decision are not used to define GES but to set targets.

In the accompanying text to its GES definition, the NL describes the existing policies already in place against contamination, including IMO regulations for dumping, OSPAR’s decision on reducing emissions, the Bonn Agreement and SEVESO II, the WFD (but not specifically the EQSD) and national policies already in place. The NL justifies not adopting a new policy for contaminants in the marine environment by referring to the initial assessment, which demonstrates that the policies in place have helped reduce concentrations of contaminants drastically since the 1970’s and should continue to do so. The NL acknowledges that achieving GES by 2020 will not be possible unless the targets within the WFD for certain substances (especially PAHs) are lowered, since the NL considers that all possible measures have already been taken.

Through the accompanying text, it can be inferred that the NL considers GES to be the achievement of the objectives of existing policies. However, the definition of the GES itself does not contain any direct reference to threshold values and baselines for specific substances, which would specify what is meant with “levels not giving rise to pollution effects”. In the accompanying text, there is no direct specification of which substances are concerned by the GES definition (although the NL provides a few examples such as TBT and oil), which values these substances should not exceed and in which matrix the measurements should be done. The references to existing policies are not specific enough on these various points.

Conclusion on adequacy: The definition of GES by the NL for D8 is considered *inadequate*. Although the approach can be seen as pragmatic (implementing existing legislation rather than creating a new one), the complete lack of specification of the definition itself (e.g. what is meant with “levels not giving rise to pollution effects”, what substances are covered, what threshold values, etc.) means that there is no possibility to measure progress towards GES and ultimately achievement of GES. The reference to existing policies in the accompanying text is not specific enough to compensate for the lack of specification of the definition. Finally, it is not considered acceptable to set GES only at descriptor level and not specify it further at criterion or indicator level.

II. Initial assessment

Synthetic and non-synthetic substances

The assessment carried out by the NL of synthetic and non-synthetic substances is done at a relatively high level of details. The NL mentions the various sources of contamination but does not quantify the input loads from these various sources or the current concentrations of contaminants in the environment or provide trends (declining or improving). Some general trends, applicable to several countries and extracted from OSPAR’s assessments, are however provided in the “limitations” field of the reporting sheet.

The assessment is a little more specific when it looks at the effects of TBT, DDT, PCB and PAH on certain species, providing past and future trends. It still does not provide any quantitative information on e.g. the proportion of a specific functional group/species affected by a substance. The NL does not address the impacts on ecosystem components of non-synthetic substances. The assessment of impacts is restricted to TBT. The NL does not specify the non-synthetic substances assessed but mentions OSPAR assessment results for lead, cadmium and mercury.

The NL refers extensively to existing policies in its assessment, which clearly indicates that the initial assessment, done according to MSFD Article 8, is a compilation of information collected under other processes. No additional, new assessment has been carried out specifically for the purpose of the MSFD. This is acknowledged by the NL in the reporting sheets.

The NL makes a semi-quantitative judgement on the level of contamination from synthetic and non-synthetic substances, referring to OSPAR and WFD standards. More details are provided in the limitations field about which substances are included in this judgement. It is however not conclusive with regard to the current level of, and impact from, the pressure in relation to GES.

Radionuclides

A limited assessment of contamination by radionuclides has been carried out, mentioning the sources of contamination and referring to OSPAR's assessment of current levels. There is a general lack of details regarding the substances assessed and the concentration levels measured. Almost no assessment of impact on ecosystem components is done.

Acute pollution events

The NL describes in details the existing national, regional, EU and international agreements that are currently implemented to address the problem of acute pollution and mentions cooperation with neighbouring countries. The NL reports more information in the reporting sheets than in the paper report. It provides an overview of number of events over the 2000-2010 period and trends in terms of volume of spills observed. It also provides a small description of impacts on birds and marine mammals, referring to OSPAR's EcoQO on oiled guillemots. The NL does not make a conclusive judgement on the level of the pressure but acknowledges that the OSPAR EcoQO is not met.

Conclusion on adequacy: the initial assessment of contamination of the Dutch marine waters for hazardous substances, radionuclides and acute pollution events is considered *partially adequate*. The NL does not report at a sufficient level of details on the level of pressure in the marine environment. Past trends are described in more details but the assessment of impacts on habitats and functional groups is limited and focused solely on TBT. The NL refers to existing policies and agreements and makes a judgement on this basis for certain parameters but does not actually conclude on the current situation in relation to GES.

III. Environmental targets

Environmental targets (reporting sheet and paper report):

Target 8a: Counter the concentrations of contaminants where these do not meet the targets of the Water Framework Directive, pursuant to its timeline

Associated indicator 8a: Concentrations of contaminants – In the zone from the basic coastline up to 12 nautical miles from the coast, the measurement method pursuant to the WFD is applied, in total water.

Target 8b: Ensure that concentrations of other known substances, where these meet the Water Framework Directive standards, do not exceed current concentrations and, where possible, reduce them

Associated indicator 8b: Concentrations of contaminants – Additionally, the measurement method in accordance with OSPAR's Coordinated Environmental Monitoring Programme is applied, in biota.

Target 8c: A prevention target for currently observed effects of pollution from TBT and oil

Associated indicator 8c: Effects of TBT: the incidence of imposex in sea snails (gastropods) due to TBT (OSPAR-EcoQO)

Associated indicator 8c: Effects of oil: The number of oil-smeared beached birds (OSPAR-EcoQO). The assessment value for oil pollution is that less than 20%³ of the beached guillemots are covered in oil.

(Operational) Target 8d: Occurrence and extent of significant acute pollution events (e.g. slicks resulting from spills of oil and oil products or spills of chemicals) and their impact on biota affected by this pollution should be minimised through appropriate risk based approaches.

No indicators associated to this operational target.

The NL has set four targets and three associated indicators to cover Descriptor 8. The last target, called “operational”, is a common qualitative target defined within OSPAR for acute pollution. Despite its lack of specification (e.g. threshold value, baseline, indicator), the inclusion of this target by NL means a certain level of coherence with neighbouring countries.

The targets cover all aspects of Descriptor 8 (concentration and effects of contaminants and acute pollution event) except radionuclides, which is expected at this stage. The first three targets (and their associated indicators) are quantified, though not directly but through reference to the WFD and OSPAR standards and they are time-bound (either 2020 or the WFD timeline). They refer to the appropriate EU and RSC standards and criteria (WFD targets and OSPAR’s CEMP and EcoQOs) and explain in the accompanying text that the two measurement methods (WFD and OSPAR) should be used jointly in areas where the WFD and OSPAR overlap. They recognize that this may lead to diverging results and conclude that this is an area where more work is needed within the EU. They also refer to the Commission’s “Technical Guidance for Deriving Environmental Quality Standards” developed in 2011 for the WFD which contains specific guidance on the derivation of EQS for freshwater and saltwater. The targets are relatively specific although the contaminants covered by targets 8a and 8b are not provided.

Contrary to the other indicators, the associated indicator on effects of TBT does not specify a threshold value for the achievement of the target. However, it directly refers to the OSPAR EcoQO for imposex, which should be specific enough. It should be noted that the NL has not set a target following the OSPAR EcoQO on the levels of hazardous substances in seabird eggs. It should also be noted that the indicator for oil-smeared beached birds differs from the EcoQO since it refers to a limit value of 20% of the beached guillemots while the OSPAR EcoQO refers to 10% of the total found dead or dying (over a period of 5 years). The Dutch target is therefore less ambitious than the OSPAR one.

Target 8d is not specific since there is no detail on what is meant with “minimised” (no quantitative trend provided). This target is defined more as a GES statement than an actual target. It is the only target however that is aimed at controlling human activities.

Conclusion on adequacy: the set of targets defined by the NL to cover Descriptor 8 is considered as *partially adequate*. It is measurable and quantified except for one target on acute pollution. It refers to the relevant EU and RSC standards and is time-bound. However, it lacks certain details (e.g. contaminants concerned, definition of the terms “reduce” (target 8b)) and is not very ambitious (e.g. less stringent target than OSPAR EcoQO).

³ The paper report (both in Dutch and English) says 20% while the value indicated in the reporting sheet is 10%. The assessment is based on the 20% value.

IV. Consistency

There is no apparent inconsistency between the description of the level of pressure from contaminants and the GES definition. The lack of specificity regarding the definition of GES for contaminants effects is reflected in the limited reporting on this aspect for the initial assessment.

The set of targets and indicators are consistent with the pressures reported in the initial assessment. They do address contaminant effects to a larger extent than what is done for the IA. It is also considered sufficient to achieve GES considering that GES is restricted to concentration of contaminants and both GES and targets use the same standards.

Section 9. Descriptor 9 (Contaminants in Fish and Seafood)

I. Good Environmental Status (GES)

GES definition (reporting sheet and paper report):

D9. Contaminants in fish and other seafood for human consumption do not exceed levels established by Community legislation or other relevant standards.

The NL has set GES for Descriptor 9 only at descriptor level in both the reporting sheets and the paper report. In the reporting sheet, the NL acknowledges that GES has been set only at Descriptor level. In the paper report, the NL reports the criterion defined in the Commission Decision on “levels, number and frequency of pollutants” but without specifying it further. As for other descriptors, the NL links its definition of GES to its setting of targets and uses the criterion and indicators of the Commission Decision in the setting of targets rather than for the specification of the definition of GES.

In the accompanying text to its GES definition, the NL describes the policies already in place, which target contamination in fish and seafood. This includes mainly the relevant European legislation in this regard as well as national legislation. Direct reference is made to Regulations 1881/2006, 1259/2011, 396/2005, and 3954/87 and to the substances these regulations target (lead, cadmium and mercury, dioxins/furans and dioxin-like PCBs, and benzo(a)pyrene, PCBs, pesticides, radioactive substances). Through the accompanying text, it can be inferred that the NL considers GES to be the achievement (or maintaining) of the objectives of existing policies. This is justified by the initial assessment, which has concluded that, through the implementation of these policies, GES is already achieved in the Dutch marine waters when it comes to the contamination of fish and seafood.

No reference is made to OSPAR, which is explained by the fact that OSPAR has not worked on this issue.

Conclusion on adequacy: The definition of GES for Descriptor 9 is considered as *partially adequate*. The GES definition (as stated in the Directive) directly refers to Community legislation and NL has specified further the relevant EU Regulations (and related substances) covered by its GES. The GES definition is therefore measurable and specific when read in conjunction with the accompanying text. However, because the actual GES definition is not further specified at the level of criterion and indicators, it cannot be considered as fully adequate.

II. Initial Assessment

In the reporting sheets, the NL has systematically mentioned that the field concerning the impacts from hazardous substances on fish and other seafood was not included in the reporting sheets that were discussed in WG DIKE of the CIS. Therefore, the NL did not report any information on this in the reporting sheet. However, in the paper report, the NL describes the method used for the monitoring of contaminants in fish and seafood. It provides the list of the types of substances for which maximum levels have been set and which are monitored by the relevant Dutch authority (heavy metals, dioxin-like substances, organo-chloro pesticides, PCBs, TCPM(e) (Tris(4-chlorophenyl)methanol and methane), brominated flame retardants, and PAHs (polycyclic aromatic hydrocarbons)) and the species covered by this monitoring (mussels, shrimp and some twenty commercially exploited fish species).

This assessment should be seen in conjunction with the more general assessment of contamination by hazardous substances, in particular in relation to the sources of contamination and the marine activities causing the pressure. The NL provides a short assessment of the level of radionuclides in the

environment but does not refer specifically to their impacts on fish and seafood. The NL makes reference to the relevant EU legislation (including recent amendments to Regulation 1881/2006) and to national legislation. It also makes reference to OSPAR in relation to contamination by radionuclides.

The NL does not make a conclusive judgement that the current status is good but this is implied when NL states that measurements indicate that the maximum levels of contaminants in fish and other seafood are not exceeded at the moment.

The NL has reported on microbial pathogens (only in the reporting sheet). The NL notes that no specific GES criteria exist for microbial pathogens (reporting sheet, pressures)⁴. The relevant types of water are assessed (bathing waters and shellfish waters). All geographical areas are covered. The judgement on the level of pressure and its impact is in line with the information reported.

Conclusion on adequacy: the initial assessment of the contamination by hazardous substances of fish and other seafood (including contamination by microbial pathogens) is considered *adequate*. The NL provides information regarding the substances monitored and refers to the relevant legislation. No conclusive judgement is made but it can be inferred and is directly related to the GES definition for D9. The status in relation to microbial pathogen contamination has been assessed in relation to the Bathing Water Directive and the Shellfish Directive and is considered as good.

III. Environmental targets

Environmental targets (reporting sheet and paper report):

Target 9. The levels of contaminants in fish and other sea food from the North Sea do not exceed the standards of national and international legislation.

Associated indicator: The frequency with which the applicable limits are exceeded

Associated indicator: The actual values measured.

Associated indicator: The number of contaminants that, as measured, concurrently exceeded limits

Associated indicator: The source of contamination (geological versus anthropogenic, local versus long distance).

The NL has defined one target and four associated indicators to cover Descriptor 9. The set of the target and its indicators is specific and measurable (except for the last indicator which is not measurable). In line with the approach adopted for other descriptors, the indicators set for environmental targets correspond to the indicators defined in the Commission Decision with an additional indicator on the source of contamination. Target 9 refers to national and international legislation. It is not clear why it does not refer to Community legislation, as the GES definition does, but it can be inferred that international legislation includes the relevant EU regulation. The accompanying text to the target/indicators does not specify further which national and international legislation are included but this is specified in the reporting sheets. The accompanying text makes reference to the types of substances covered by the targets and the species monitored by the current annual monitoring programme. It is not explicitly stated that these parameters are the same as those addressed by the target/indicators but it can also be extrapolated.

What is not clear from the Dutch reporting of target/indicators for D9 is the actual threshold values and the baselines or reference points associated with these. In the reporting sheets, the NL notes that the baseline for the measurement of the indicators is the current state but still does not set threshold values. The NL specifies in the paper report that the indicators are “existing indicators”. It is not clear what this refers to and in particular if it refers to an existing national legislation/policy where such thresholds would be already stated.

⁴ It should be noted that no mention is made in the paper report of microbial pathogens. The NL refers in the RS to the reporting under the Bathing Water and Shellfish Directives.

Conclusion on adequacy: the set of targets defined by the NL to cover Descriptor 9 is considered as *partially adequate*. While the target/indicators are specific and potentially measurable, the lack of threshold values for the indicators means that it is not possible to actually assess the achievement of the target and renders the indicators effectively useless.

IV. Consistency

The assessment of the pressures and impacts is fully consistent with the definition of GES although it should be noted that no assessment has been made on the contamination of radionuclides in fish and seafood.

The set of environmental targets and associated indicators is consistent with the assessment of the impacts of contamination on fish and seafood in that it addresses the same substances monitored in the same species., with the exception of the last indicator on the source of contamination, which does not relate to a particular parameter addressed in the 2012 initial assessment.

The set of the target and its indicators is also not fully consistent with the GES definition since it includes monitoring of certain parameters, such as the frequency with which the applicable limits are exceeded, which are not at all addressed by the definition of GES. Such an indicator would be consistent with GES (and the initial assessment) only if it included a notion of diminution of this frequency to zero levels or the maintenance of a current zero-level frequency. This applies also to the third indicator on the number of contaminants that exceed limits.

Section 10. Descriptor 10 (Marine Litter)

I. Good Environmental Status (GES)

Definition of GES (reporting sheets and paper report):

D10. Properties and quantities of marine litter, including their degradation products such as small plastic particles down to micro-plastics do not cause harm to the coastal and marine environment and their volume decrease over time.

The NL has defined GES for descriptor 10 at descriptor level only. The criteria and indicators laid out for Descriptor 10 in the Commission Decision have not been incorporated. The GES definition at descriptor level reflects the definition in the Directive, to which it adds on small plastic particles, including micro-particles and an overall reduction of the volume of marine litter over time.

Yet, it is unclear how the NL aims to achieve a volume reduction and whether it will address new waste entering the marine environment and/or the existing waste in the marine environment. A baseline and threshold values have not yet been set. Due to the complexity of the marine litter problem, the NL has difficulties in formulating a more precise and quantitative definition and is unclear on whether GES can be achieved by 2020.

In the GES definition, the NL does not specifically refer to OSPAR. It does mention the MARPOL Convention Annex V and the European Directive on port reception facilities. The MARPOL Convention Annex V imposes a complete ban on waste disposal as of 1 January 2013, with some exceptions (food remnants). In addition, keeping a Garbage Record Book is already compulsory for the MARPOL convention. The NL is also committed to optimising the European Directive on port reception facilities by such measures as the mandatory delivery of waste when a ship leaves for a port outside the EU, a European information and monitoring system, and harmonisation of the enforcement and financing systems.

Conclusion on adequacy: The definition of GES for Descriptor 10 is considered as *inadequate*. The GES definition provided by the NL has been developed further than the text provided in Annex I but does not contain sufficiently specified thresholds and baselines to determine at what point GES is achieved. While the complexity of marine litter is acknowledged, the reported GES definition remains insufficient specified considering the state of knowledge and indicators already available (OSPAR EcoQO). The NL has opted instead to use the indicators such as the OSPAR EcoQO for plastic in fulmar stomachs for the Article 10 targets instead of for Article 9 definition of GES which is in line with the Dutch methodology but not in line with the MSFD.

II. Initial Assessment

The Dutch reports substantial information from OSPAR beach litter monitoring activities and the OSPAR EcoQO target on the ingestion of plastic by Fulmars. Beach litter on Dutch beaches is reported as being below the OSPAR target threshold, while the target threshold for plastic ingested by Fulmars is exceeded. Waste collection from the seabed and water column by the “fishing for litter” initiative is also mentioned. Trends in type and amount of waste are reported. Ship traffic and fisheries are reported as the main sources of marine litter. The impact of plastic inflows from rivers is currently being assessed.

In addition, the NL reports a lack of data and of monitoring protocols for marine litter in the water column, on the seabed, for micro-plastics and for the impact of marine litter on marine life and ecosystems. Aside from the ingestion of plastics by marine life, the entanglement of seabirds, fish and

other marine animals is expected to be detrimental. The International Bottom Trawl Survey (IBTS) is expected to be extended in order for it to be able to provide data on seabed litter. Plans to address the knowledge and data gaps are only discussed to a limited extent.

Conclusion on adequacy: The initial assessment of marine litter in the Dutch marine waters and on the beaches is considered *partially adequate* considering the knowledge and monitoring data available. The Dutch assessment does not sufficiently address the impacts of plastic pollution on the environment or functional groups.

III. Environmental targets

Environmental targets (reporting sheet and paper report):

Target 10a: The quantity of visible beach litter has decreased (basic reference 2002-2009)

Associated indicator: Trends in the amounts, composition, distribution and sources of litter found on beaches.

Target 10b: There is a decreasing trend in the quantity of litter in marine organisms

Associated indicator: Trends in the quantity and composition of plastics found in the stomachs of marine organisms. The OSPAR-EcoQO 'quantity of plastics in fulmar stomachs' is used as indicator. This EcoQO is indicative of the quantity of litter found in marine organisms in the Dutch part of the North Sea, and it provides information on the quantity of plastics floating on the sea

The NL reports two targets, each associated by one indicator. The targets aim at decreasing trends on beach litter (target 10a) and ingestion of plastic by marine life (target 10b). The two targets are consistent as a set.

The target and associated indicators are measurable and refer to well-tested OSPAR methodologies and targets agreed by the OSPAR parties. Required data series are available. Yet, the set of targets is limited in terms of ambition and coverage of all aspects of marine litter. Several frameworks in which targets are formulated are mentioned. With regards to the state of marine litter, litter on the seabed and in the water column, incl. micro-particles are not covered. Floating litter is indirectly addressed through Target 10b. In addition, targets have not been identified to address pressures (sources) of marine litter, despite the statement on the reduction of volume in the GES definition. Quantitative threshold values and baselines have not been set for the beach litter target. The existing OSPAR EcoQO target on the ingestion of plastic by Fulmars implicitly includes a quantitative threshold value.

Conclusion on adequacy: In conclusion, the set of targets is *partially adequate*. Beach litter and the impact of marine litter on marine life have been addressed, but not seabed litter. In addition, in absence of targets addressing pressures, it will be challenging to achieve GES. The EcoQO implicitly refers to a quantitative threshold value. For the target on beach litter, a quantitative threshold is not set. The targets also do not show a high level of ambition.

IV. Consistency

Targets are only set where sufficient data and knowledge is available, and reported in the IA, namely on beach litter and plastic ingested by Fulmar. For all other aspects, data is not reported and targets have not been identified. It is expected that more data and knowledge is available in the Netherlands than has been reported.

The GES definition also addresses micro-plastics and aims for a reduced volume of marine litter. Yet, nor in the IA, nor in the targets, mention is made of micro-plastics and ways to reduce the volume of marine litter. The target on beach litter implicitly assumes beach cleaning as well. Good reference is

made to OSPAR initiatives in the IA and targets section, but only to a limited extent in the GES definition. In general, the set of targets has a limited scope and is not expected to achieve GES.

Section 11. Descriptor 11 (Introduction of energy)

I. Good Environmental Status (GES)

Definition of GES (reporting sheet and paper report):

D11. Introduction of energy, including underwater noise, is at levels that do not adversely affect the marine environment. Loud, low and mid frequency sounds and continuous low frequency sounds introduced into the marine environment through human activities do not have adverse effects on marine ecosystems.

The NL has defined GES for Descriptor 11 at descriptor level. The criteria laid out for Descriptor 11 in the 2010 Commission Decision are copied into the GES definition at descriptor level. The current state is reported as the baseline. Threshold values have not been set.

The GES definition is broadly defined and lacks detail on what GES in practice means. Reference is made to the IMO with respect to continuous low frequency sound.

Conclusion on adequacy: The GES definition for Descriptor 11 is considered *inadequate*. The GES definition provided by the NL has been developed further than the text provided in Annex I but does not contain sufficiently specified thresholds and baselines to determine at what point GES is achieved.

II. Initial Assessment

The reported information is limited and largely based on the OSPAR Quality Status Report (QSR) 2010. The NL reports a need to monitor underwater sound. The paper report explains the information gaps, what knowledge exists and how effective the existing policy on the area is. The NL reports that there is substantial information on the potential harmful effects of noise but the actual noise levels underwater, the trends in these levels, and the relationship between the doses of noise received and their effects on populations and at the ecosystem level are unknown. Furthermore it is not yet clear how the impacts of noise relate to other factors impacting the marine environment.

The main pressures of impulsive sound are reported to be construction, seismic surveys, clearing of old ammunition, renewable energy and oil and gas exploration and extraction. The intensive shipping in the North Sea is the main source of the high ambient noise levels. In general the Dutch chapter on noise in the paper report contains only descriptive knowledge on possible effects but no data on actual impacts or measurements.

Conclusion on adequacy: The initial assessment is considered *inadequate* since the assessment provided is only descriptive and with the exception of pressures which are identified but not quantitatively assessed, very little information specific to Dutch marine waters has been provided.

III. Environmental targets

Environmental targets (reporting sheet and paper report):

Target 11a: Individual cases: preventing harmful effects on the ecosystem, particularly on marine fauna, resulting from specific activities such as pile-driving and seismic surveys
Associated indicator: Distribution in time and space of loud impulse noises with a low or medium frequency

Target 11b: Background noise and accumulation of effects on populations or at the ecosystem level: targets in 2018, when more knowledge has been gathered

Associated indicator: Uninterrupted low-frequency noise

The NL has defined two targets to cover D11, each accompanied by an associated indicator. Target 11a aims to prevent the harmful effects of impulsive noise on the ecosystem for individual cases. Pile-driving and seismic surveys are specifically included in the target. Target 11b addresses continuous noise, but will only be developed by 2018 when more knowledge comes available.

It is unclear why target 11a on the one hand focuses on individual cases in the target definition, but on the other hand refers to a distribution over space and time in the associated indicator. The approach in the target is in line with an Environmental Impact Assessment (EIA) of individual projects (sources of impulsive noise) whereas the indicator in the Decision refers to a large-scale assessment of underwater noise.

<i>Conclusion on adequacy:</i> The GES definition is considered <i>inadequate</i> since the targets are not specific enough and it is not certain whether they are sufficiently ambitious to achieve GES.

IV. Consistency

In general, the reporting on underwater sound is limited for GES, IA and targets. The GES definition is consistent with the set of targets, and in correspondence with the Commission Decision, but lack specificity. The targets and the GES definition do not address the pressures of underwater noise. The main pressures are reported in the IA but are described in limited detail. It is doubtful whether GES can be achieved. Substantial data and knowledge gaps are reported.

Section 12. General Conclusions

Overall, the Dutch report presents various positive and negative elements as follows.

Positive elements:

- Strong link with the RSC (OSPAR)
- Systematic use of EU requirements and standards
- Coverage of all descriptors for all articles
- As a rule, extensive justification is provided on gaps in monitoring and assessment data accompanied most of the time by plans to close these gaps
- On the whole, the main pressures have been identified and reported on
- Systematic use and integration of existing and planned policies and measures
- The NL has included data on recreational fisheries in their initial assessment.
- The NL has made a financial commitment in the multiannual budget (2012-2020) of the relevant ministries for the implementation of the marine strategy measures additional to those already provided for under existing or proposed statutory frameworks

Negative elements:

- Overall lack of ambition e.g. the NL does not go beyond existing standards at EU or RSC level and the initial assessment is often used as a baseline for targets and GES
- GES is defined only at the descriptor level and generally merely reproduces the definitions set in Annex I of the Directive without further specifications and/or quantification
- Impacts from pressure are not systematically reported on
- Many targets are interim targets and the associated indicators to these targets still need further development and are expected to be operational only in 2018
- No new assessment seems to have been made specifically for the implementation of the MSFD