

**Review template for the four brief documents
of the second World Ocean Assessment (WOA II)**

D. Brief on WOA II and Sustainable Development Goal 14: life below water

Section [number]: [title]	Comment	Response from the Experts
Argentina		
Section II: Sustainable Development Goal 14 targets, state of knowledge and gaps in knowledge and capacity		
Pag. 14, Target 14.7, State of knowledge	There's not an internationally agreed definition for the concept of "blue economy", it is suggested its replacement by "sustainable and inclusive ocean economy" which is language agreed at the multilateral level (e.g.: 2021 COFI Declaration for Sustainable Fisheries and Aquaculture).	<i>The text reflects that included in the second World Ocean Assessment as identified in the footnote. Introducing an alternative definition of the blue economy would then change the text so that it is no longer reflective of the content of the second World Ocean Assessment. Note that the 2021 COFI Declaration relates to sustainable fisheries and aquaculture only and not the whole global ocean economy. It should also be noted that the term blue economy originated during preparations for the Rio+20/Earth Summit, at the time being recognised as an important extension of the green economy, so has</i>

		<p><i>origins within the UN system. Also, the World Bank Group defines Blue Economy as the sustainable and integrated development of economic sectors in healthy oceans. No change made. Comments will be taken into consideration in the development of the third cycle.</i></p>
<p>Pag. 15, Target 14.7, Knowledge and capacity gaps</p>	<p>There's not an internationally agreed definition for the concept of "blue economies", it is suggested its replacement by "sustainable and inclusive ocean economies" which is language agreed at the multilateral level (e.g.: 2021 COFI Declaration for Sustainable Fisheries and Aquaculture).</p>	<p><i>The text reflects that included in the second World Ocean Assessment as identified in the footnote. Introducing an alternative definition of the blue economy would then change the text so that it is no longer reflective of the content of the second World Ocean Assessment. Note that the 2021 COFI Declaration relates to sustainable fisheries and aquaculture only and not the whole global ocean economy. It should also be noted that the term blue economy originated during preparations for the Rio+20/Earth Summit, at the time being recognised as an important extension of the green economy, so has origins within the UN system. Also, the World Bank Group defines Blue Economy as the sustainable and integrated development of economic sectors in healthy oceans. No change made. Comments will be taken into</i></p>

		<i>consideration in the development of the third cycle.</i>
Pag.6, Target 14.2, State of knowledge	“Natural-based solutions” is not internationally agreed language. Therefore, it is suggested its replacement by “ecosystem-based approaches”, which is language agreed at the Conference of Parties to the Convention on Biological Diversity (Decision 14/5).	<i>The text reflects that included in the second World Ocean Assessment. Changing the text would make it no longer reflective of the content of the second World Ocean Assessment. Note that the term “nature-based solutions” is a commonly used term, e.g., by IUCN and the European Union, and used here on purpose instead of ecosystem-based approaches to depicting approaches used in coastal protection and coastal development. Blue infrastructure is used in the second World Ocean Assessment citing Kazmierczak and Carter, 2010; Edwards and others, 2013.</i>
Canada		
Section II: Sustainable Development Goal 14 targets, state of knowledge and gaps in knowledge and capacity		
6, 4	Suggest providing definitions for blue infrastructure and nature-based solutions.	<i>The text reflects that included in the second World Ocean Assessment. Changing the text would make it no longer reflective of the content of the second World Ocean Assessment. Note that the term “nature-based solutions” is a commonly used term, e.g., by IUCN and the European Union and used here on purpose instead of ecosystem-based</i>

		<i>approaches to depict approaches used in coastal protection and coastal development.</i>
11, 5-6	Other Effective Area-based Conservation Measures (OECMs) should also be included here as contributing towards the 10% under the CBD.	<i>The text reflects that included in the second World Ocean Assessment. Changing the text would make it no longer reflective of the content of the second World Ocean Assessment. Noting that the 2020 Framework is yet to be finalised and so the contribution of OECMs to the framework is yet to also be determined (and it is beyond the scope of a document summarising the content of the second WOA to predict what that contribution might be). It should also be noted that OECMs are not identified specifically in the targets of the SDGs, or the indicators associated with the targets of SDG14. In association, the text included in this brief should not confuse targets and indicators associated with the SDGs with those that might be in discussion in relation to the post-2020 Framework. While there are ongoing efforts to ensure they align, they are separate.</i>
China		
Section [II]: [Sustainable Development Goal 14 targets, state of knowledge and gaps in knowledge and capacity]		

<p>[Page 20], [paragraph 14.c, State of knowledge (line 4-5)]</p>	<p>Regulations concerning the conservation and sustainable use of oceans and their resources are articulated in other international legal instruments as well.</p> <p>Thus, we made the following modification:</p> <p>“Efforts continue to strengthen the implementation of <u>international law, including the United Nations Convention on the Law of the Sea</u> at all levels, ...”</p>	<p><i>Agreed, language changed</i></p>
<p>Colombia</p>		
<p>General comments</p>		
<p>Illegal unreported and unregulated fishing [Pages 22, 23, 24, 32]</p>	<p>There are several alternatives to combat Illegal, Unreported and Unregulated fishing - IUU, such as the adherence of countries to the implementation of the Agreement on Port State Measures - AMERP, innovate in new satellite technologies, as an effective tool for the analysis and monitoring of fishing vessels, share effective and transparent information in order to strengthen port controls and combat illegal fishing, exchange successful experiences with other countries to look at various regulation models, work on political will, on regional legal frameworks and international, etc.</p>	<p><i>The text reflects that included in the second World Ocean Assessment. The Agreement on Port State measures is discussed in the first paragraph on page 10 and reflects the text of the second World Ocean Assessment. Discussion of the use of new approaches is also included in this paragraph.</i></p>
<p>Aquaculture</p>	<p>Something to add to the section about Aquaculture, is the responsibility of its promotion, without losing sight of the sustainable use of resources and avoiding</p>	<p><i>Text is added according to chapter 16 of the second World Ocean Assessment: “Further sustainable growth will need to consider ongoing improvements to reduce</i></p>

	at all costs, the accidental release of invasion species individuals.	<i>environmental impacts, including those associated with disease and escapes.”</i>
[State of knowledge] [Pages 9/22],	Recent projects with the FAO have addressed problems such as bycatch, using the ecosystem approach for fisheries. For example, the shrimp trawling fishery has been well studied to reduce its environmental impacts through work with fishermen and other interested parties. Technological changes were evaluated to reduce impacts on marine biodiversity and seafloor habitats, including the use of bycatch reducing devices, changing netting materials, the design of space-time closures, shrimp quotas, etc. Political incidence has been directed towards better fisheries management based on better science balancing productivity and conservation.	<i>Noted with thanks. The text reflects that included in the second World Ocean Assessment. Ecosystem-based approaches to fisheries management are discussed in the second paragraph on page 10. It is beyond the scope of the brief summarising the content of the second World Ocean Assessment to detail specific projects by any one agency.</i>
Section [II]: [Sustainable Development Goal 14 targets, state of knowledge and gaps in knowledge and capacity]		
[Page 4], [Paragraph 2]:	At the same time, the need to monitor and define one or more indices for monitoring coastal eutrophication processes is Page 19 of 20 increasingly recognized. Many initiatives exist and a committee could be created to evaluate existing indicators	<i>Note with thanks. Methods for monitoring pollutants are discussed in the last paragraph of page 4.</i>
[Page 4] , [Paragraph 9]	It should be mentioned that pollution and contamination could also come from marine sources, such as plastic pollution as well as activities that take place in the	<i>Noted with thanks. The text reflects that included in the second World Ocean Assessment. Pollution is being discussed broadly in the second World Ocean</i>

	sea such as fishing boats, tourism and merchant marine.	<i>Assessment and therefore includes both land-based and marine sources of pollution, noting that in the case of noise pollution, most is derived from marine sources.</i>
[Page 6], [Paragraph 12]	Identify strategies to monitor and evaluate marine pollution of all kinds, including data visualization systems. Those strategies will be general but need to be applied according to the regional needs and gaps to replicate locally and regionally, articulate technical, logistical, and financial efforts to ensure that less developed countries can increase their capacities.	<i>Noted with thanks. Needs for monitoring of pollutants is discussed in the last paragraph of page 4.</i>
[Page 7], [Paragraph 16]	Even though the protection and preservation of the marine environment depends mainly on those who use its resources, it is necessary to involve as many stakeholders as possible to have an interdisciplinary approach to resolve the problematics and to reach the sustainable development goals.	<i>Noted with thanks. Engaging broadly and accommodating the multiplicity of values (i.e., how industry and society value the marine ecosystem - economically, socially and culturally) is discussed in paragraph three of page 7.</i>
[Page 8], [Paragraph 20]	High scientific rigor is required in the estimation of the parameters of carbonate chemistry to report adequately the indicator 14.3.1, given the nature of the indicator. It is needed to standardize methodologies to evaluate the carbonate chemistry in the coastal zone since it has different characteristics from the ocean. Standardization is referred to analytical procedures such as those published by	<i>Noted with thanks. This standardisation (not only in methodologies but data management and sharing pipelines) is exactly what the Essential Climate Variables and Essential Ocean Variables of the Global Climate Observing System and the Global Ocean Observing System (discussed in paragraph 7 of page 8) are working to achieve.</i>

	networks such as REMARCO, to validate the information generated, provide laboratories with kits and equipment, and guarantee continuous training in favor of strengthening technical scientific knowledge. All of these are required to generate base information to calculate the indicator 14.3.1 with enough technical quality	
[Page 10] [Paragraph 25]	Hence the importance of measures such as the precautionary principle and the ecosystem approach to fisheries management; the foregoing, in order to avoid irreversible changes in the environment and in the event of scientific uncertainty, unpredictable weather.	<i>Noted with thanks.</i>
[Page 13], [Paragraph 32]	In order to meet the goals, fishing subsidies should be completely prohibited, these subsidies should be promoting sustainable fishing, well-managed fisheries and restoration efforts, in order increased fish stocks and to promote a sustainable fishing industry	<i>Noted with thanks. The summary of the content of the second World Ocean Assessment identifies both detrimental and beneficial subsidies and that negotiations on reducing detrimental subsidies are underway. It is beyond the scope of the brief to identify specific policies that should be implemented.</i>
[Page 15], [Paragraph 38]	Marine and coastal tourism is one of the main economic assets of a territory surrounded by sea. This is why the infrastructure of a destination is important when it comes to attracting tourists and also to boost business in the community.	<i>Noted with thanks.</i>
[Page 15], [Paragraph 41]	In order to empowered countries and communities to fully participate in conservation and the sustainable use of the	<i>Noted with thanks. Resource and financial constraints are identified in the first</i>

	ocean is it compulsory to create financial mechanisms that can pay for the efforts to conserve the marine environment.	<i>paragraph under the knowledge and capacity gaps section of page 15.</i>
[Page 16], [Paragraph 42]	In this point, it is mentioned that the understanding of the ocean, its functioning, and the impacts on it its growing (Target 14.a). On the other hand, in the page 14, paragraph 98, section V. “Main results on biodiversity presented in the second World Ocean Assessment” of the C. Brief on WOA II and Marine Biodiversity, its mention that at the regional level, large disparities on the understanding of the ocean remain [...which] affect possibilities for engaging in competitive ocean research... With the aim of avoiding a confusion we suggest including some figures, number comparisons or maps that support the growing of scientific understanding of the ocean.	<i>This brief is summarising the content of the second World Ocean Assessment in relation to the Sustainable Development Goals. An additional brief summarising the content of the second World Ocean Assessment in relation to marine biodiversity is also being produced and so it is more appropriate for such a comparison to be included in that brief and not in this one so as to ensure that there is not duplication of content (and efforts). Just because understanding is growing does not mean that there are not still knowledge gaps to be filled (one does not negate the other).</i>
Section [III]: [The effects of the coronavirus disease pandemic on the marine environment]		
[Page 22], [Paragraph 53]	Even though there was a reduction on the pressures affecting the ocean during the pandemic, once daily activities went back to normal all these pressures quickly came back to the marine environment. Local and worldwide monitoring on the ocean is essential to understand the full	<i>Noted with thanks. The first paragraph notes that the effect of the pandemic on pressures was expected to be minimal. Daily activities in many parts of the world are yet to return to "normal". The second paragraph identifies that the full implications on the ocean are yet to be determined and could be a focus of</i>

	implications that the pandemic has had on the ocean and society.	<i>assessment(s) developed during the third cycle.</i>
[Page 22], [Paragraph 55]	The effects of covid 19 contributed to changing the awareness of nature care and business models. It also allowed us to appreciate and value the resources and bio-diversity offered by the ocean.	<i>Noted with thanks. The first paragraph notes that the effect of the pandemic on pressures was expected to be minimal. Daily activities in many parts of the world are yet to return to "normal". The second paragraph identifies that the full implications on the ocean are yet to be determined and could be a focus of assessment(s) developed during the third cycle. Implications of the pandemic will vary regionally.</i>
Korea, Republic of		
[Indicate the scope of comment A, including the paragraphs to which comment A is relevant]	[Comment A] I will make comments on sections I to IV. All paragraphs on this matter will be dealt with	
Section [I]: [Background]		
[2], [1]	As Goal 14 supports other goals, and other goals also support Goal 14, I recommend to add “and vice versa” at the end of the paragraph. “The second Assessment also highlights the interrelationships between Goal 14 and other Goals, demonstrating that achieving Goal 14 targets will support meeting targets of other Goals, and vice versa”.	<i>Agreed, language changed</i>

<p>Section [II]: [SDG 14 targets, state of knowledge and gaps~]</p>		
<p>[4], [2:line 15-17]</p>	<p>We witness decline of pollutants’ input to ocean in some areas including POPs and as well nutrients. So, I recommend to revise the first sentence as bellows.</p> <p>Concentrations of land- and sea-based pollutants are declining in some regions due to concerted efforts by all relevant entities at global, regional and national levels. Our society are still undergoing increase of pollutants in most parts of global coastal oceans. .</p>	<p><i>Thank you for the suggestion. The first sentence has been changed to reflect the suggestion to: “Concentrations of some pollutants (such as persistent organic pollutants and metals) in some regions are declining in response to actions implemented through national regional and international agreements, while inputs of others, such as nitrogen and phosphorus, are increasing.”</i></p>
<p>[4], [3-5]</p>	<p>Marine litter is quite a severe issue in marine environment, and underwater noise is also an emerging issue. Despite of the above, the description in the text on two issues outweighs other pollutants. More detailed description on other pollutants is required, considering impact on marine environment.</p>	<p><i>The brief is summarising the content of the second World Ocean Assessment in relation to progress made against the targets of the SDG14. It is beyond the scope of the brief to go into specific detail on individual pollutants. One paragraph each has been provided in relation to nutrient pollution, marine litter, and noise pollution, with progress made in relation to Persistent Organic Pollutants metals and other emerging pollutants also included when summarising the state of knowledge. Further the content summarising knowledge and capacity gaps discusses, in most parts pollutants in</i></p>

		<i>general, therefore encompassing all types of pollutants.</i>
[6], [1]	Most impacted driver to threaten species and habitats is “physical modification” of habitats, such as artificial coastlines and reclamation. I recommend to add “physical modification of coastal habitats” at the next of “unsustainable resource use”.	<i>Noted with thanks. The text has been changed to include “habitat degradation and modification”.</i>
[6], [4: line 37]	OECMs and ABMTs are very attractive agendas to protect habitats and species. So I recommend to add “such as OECMs and ABMTs” at the next of “~and other spatial conservation measures”.	<i>The text reflects that included in the second World Ocean Assessment. Changing the text would make it no longer reflective of the content of the second World Ocean Assessment. Noting that the 2020 Framework is yet to be finalised and so the contribution of OECMs to the framework is yet to also be determined (and it is beyond the scope of a document summarising the content of the second WOA to predict what that contribution might be). It should also be noted that OECMs are not identified specifically in the targets of the SDGs or the indicators associated with the targets of SDG14. In association, the text included in this brief should not confuse targets and indicators associated with the SDGs with those that might be in discussion in relation to the post-2020 Framework. While there are ongoing efforts to ensure they align, they are separate.</i>

[7], [2: line 10]	“inadvertently” is not appropriate. Humans destroy habitats even with understanding of the damage. I recommend to delete “inadvertently” from the sentence.	<i>Agreed, language changed</i>
[7], [2: line 12]	Ecosystem service is quit a good tool to assess the “value”. So, I recommend to add “based on marine ecosystem service valuation and assessment” at the next of “values”.	<i>The text reflects that included in the second World Ocean Assessment. Changing the text would make it no longer reflective of the content of the second World Ocean Assessment. The context of the text is that the values of all stakeholders are considered (whether they be economic, environmental, societal or cultural - i.e, the multiplicity of values by many), not that marine ecosystem valuation and assessment be conducted (which may or may not consider the values of all stakeholders).</i>
[13], [3: line 31]	Subsidies are provided in not only least developed country but also developing or developed countries. To prevent negative effect from subsidies, raising awareness to countries is required. So, I would like to change “least developed countries” to “countries with subsidies policy”.	<i>The sentence refers to the special capacity needs as identified in the WTO agreement. Language changed to clarify.</i>
[15], [2]	Tourism and entry fee for fishing are main sources of income for SIDS, especially, South Pacific Islands countries, which are the major part of SIDS. So I recommend to describe statistical data of economic	<i>Noted with thanks. This specific analysis of the economy derived from tourism and international fishing licenses was not included in the second World Ocean</i>

	benefits of SP Islands countries, from tourism and fishing entry fee.	<i>Assessment, so such an assessment is beyond the scope of the brief.</i>
[19], [1]	A big issue in small scale fisheries in terms of income, is to secure logistics of catch fish including marketing. Sometimes fish processing might be important to get more added value. I recommend to deal with marketing, fish processing and logistics in this paragraph.	<i>The text reflects that included in the second World Ocean Assessment. This specific issue has not been included in Chapter 5 on capture fisheries of the second World Ocean Assessment. It can be considered in the third cycle.</i>
[20], [1]	UNCLOS and para. 158 of the Future we want deal with pollution, IUU and also biodiversity. So global treaties on biodiversity protection need to be added, e.g. CBD, Arctic and Antarctic related treaties.	<i>CBD is included in the paragraph. Regional treaties are not included but referred to as “regional conventions” in the sentence.</i>
Thailand		
General comments		
The overall principle and operation	The Department of Marine and Coastal Resources agrees with the overall principle of operation and implementation of the Sustainable Development Goal 14 (SDG14). The emphasis should be on enhancing the participation of all sectors, particularly in this goal, both in technology and knowledge transfer and funding; moreover, it should establish the linkage with the other 16 goals and other related issues, including climate change, biodiversity conservation, and others.	<i>Thank you very much for the general comment. We invite Thailand to also emphasize its priorities in the regional scoping workshop(s).</i>
US		

General comments		
Small typographic error in footnote 3, header of Target 14.2, the second paragraph on page 6 (end of first sentence), and page 18, Target 14.c header.	Change “oceans” to ocean or ocean basins.	<i>The footnote is the title of the working document and can thus not be changed. The headers are the exact language of SDG 14 targets and thus need to be kept as oceans. On page 7 changed from “oceans” to “ocean”</i>
Reviewing difficulty (all sections)	No number associated with paragraphs on this document	<i>Noted with thanks.</i>
Page 7, first paragraph, first sentence	The phrase “albeit in an irregular manner” is vague. Either delete this phrase or exchange it with “although local factors affect how much CO ₂ is absorbed in different regions.”	<i>Noted with thanks. The text reflects that included in the second World Ocean Assessment. However, as it is not only absorption of anthropogenic inputs that varies, but also natural inputs of CO₂ (and also processes resulting in acidification) and given that the use of "input" at the start of the sentence implies all inputs, the sentence has been rephrased to "The input of carbon dioxide (CO₂) into the ocean is continuing although at regionally varying rates, resulting in acidification of the ocean."</i>
Page 7, first paragraph	In the sentence starting with “In some cases” replace “has also been shown to” with “may”	<i>The text reflects that included in the second World Ocean Assessment. The proposed language would change the context of the sentence from one where changes have been observed to one where changes are postulated/hypothesised and therefore changes the context of the language used in the second World Ocean Assessment.</i>

Page 7, first paragraph	<p>In the sentence starting with “ocean acidification” delete “through dissolution and intensified bioerosion” and replace “a shift to less diverse ecosystems” to “lower density of coral coverage.” Recent studies indicate that OA affects the lateral thickening of corals more than other factors.</p> <p>https://doi.org/10.1073/pnas.1712806115</p>	<p><i>The text reflects that included in the second World Ocean Assessment. Shifts to less diverse ecosystems are discussed separately by chapter 9 of the second World Ocean Assessment (see pages 63-64). This is an entirely separate response (one is at the individual level; the other is at the community level). The text is also referring to diversity at the scale of coral reefs (so all organisms on reefs, not just coral cover, which is a crude representation of the state of coral reefs and cannot be regarded as representative of diversity at the habitat/ecosystem scale).</i></p>
Page 7, second paragraph	Make “and to build resilience” into an aside	Agreed, language changed
Page 7, second paragraph (end)	<p>Consider mentioning marine CDR efforts that have co-benefits with OA.</p> <p>https://www.nap.edu/read/26278/chapter/1</p>	<p><i>CDR was not considered by the second World Ocean Assessment, but it might be considered by assessment(s) produced in the third cycle.</i></p>
Page 7, third paragraph	<p>Consider adding the GOA-ON data explorer (http://portal.goa-on.org/Explorer) and OA-ICC ocean acidification biological response data (http://oa-icc.ipsl.fr/) to the list of international programmes for standardizing data.</p>	<p><i>The text reflects that included in the second World Ocean Assessment. These two products are not the equivalent of the GCOS ECVs and GOOS EOVS and have not been mentioned in the second World Ocean Assessment. They might be considered by assessment(s) produced in the third cycle.</i></p>
Page 18, header Target 14.c	Change “their” to “its”	<p><i>The header is the language of the SDG 14 target and can thus not be changed.</i></p>

Page 20, last paragraph, first sentence	Change “for third” to “for the third”	<i>Agreed, language changed</i>
UNEP		
Page 20, Target 14(c) on the <i>State of Knowledge</i>	<p>“...as well as in regional conventions and national legislation.” Replace <i>conventions</i> by <i>treaties</i> or <i>agreements</i>. Treaty is a generic term and may be a convention, protocol etc.</p> <p>You may opt for <i>agreements and other instruments</i> to refer to non-international legally binding instruments such as action plans, which are agreed up and implemented by Governments (see COBSEA).</p>	<i>Agreed, language changed</i>
Page 22, section on Considerations for the third cycle of the Regular Process	<p>As regards the identification of linkages between Goal 14 and Goal 16 in particular, reference may be made to the Environmental Rule of Law: First Global Report, which specifically states that:</p> <p>“Goal 14 (Life below Water) has many direct and indirect links to environmental rule of law. Calling for science-based fishery management plans (Target 14.4) highlights one of the defining elements of environmental rule of law: binding rules that take into account ecological and biological factors, such as the maximum sustainable yield of a species of fish. Additionally, regulating overfishing and eliminating illegal fishing (Target 14.4) requires strong</p>	<i>Noted with thanks. Linkages are being discussed generally rather than specifically with individual SDGs. It is beyond the scope of this brief to identify what might be considered in terms of individual linkages.</i>

	<p>environmental rule of law, which provides a framework for regulations and enforcement. The consistent application of penalties commensurate with the infraction and eliminating certain subsidies (Target 14.6)) can dissuade violations, and eliminating safe havens and financial loopholes can diminish incentives for the proliferation of illegal activity beyond illegal fishing” (see p. 228).</p> <p>The Second Global Report is under development.</p>	
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