European Commission

Assessment of the existing EU policy tools in the field of Sustainable Development Goal (SDG) 14 and other ocean-related Agenda 2030 targets

Supporting material

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Contents

Glossary

Acronym	Definition
ABNJ	Areas Beyond National Jurisdiction
Barcelona Convention	Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean
BBNJ	[Marine] biodiversity beyond national jurisdiction
BSC	Black Sea Commission
Bucharest Convention	Convention on the Protection of the Black Sea Against Pollution
BWD	Bathing Water Directive
CBD	United Nations Convention on Biological Diversity
CFP	Common Fisheries Policy
CITES	Convention on International Trade in Endangered Species
COVID-19	Coronavirus disease 2019
DG	Directorate General
EBCD	European bureau for Conservation and Development
EEA	European Environment Agency
EEZ	Exclusive Economic Zone
EFCA	European Fisheries Control Agency
EMFF	European Maritime and Fisheries Fund
EQSD	Directive on Environmental Quality Standards
EU	European Union
EU-12	Belgium (BE), Denmark (DK), France (FR), Germany (DE), Greece (EL), Ireland (IE), Italy (IT), Luxembourg (LU), Netherlands (NL), Portugal (PT), Spain (ES) and United Kingdom (UK)
EU-15	EU-12 + Austria (AT), Finland (FI) and Sweden (SE)
EU-25	EU-15 + Cyprus (CY), Czechia (CZ), Estonia (EE), Hungary (HU), Latvia (LV), Lithuania (LT), Malta (MT), Poland (PL), Slovakia (SK) and Slovenia (SI)
EU-28	EU-27 - United Kingdom (UK)
FAO	Food and Agriculture Organisation
FPDD	Floating Plastic Debris Density
GES	Good environmental status
GFCM	General Fisheries Commission for the Mediterranean
GHG	Greenhouse Gases
HELCOM	Baltic Marine Environment Protection Commission (Helsinki Commission)
ICCAT	International Commission for the Conservation of Atlantic Tunas
ICEP	Index of Coastal Eutrophication
ILO	International Labour Organisation
IMO	International Maritime Organisation
IOC	Intergovernmental Oceanographic Commission
IUU fishing	Illegal, Unreported and Unregulated Fishing
LDAC	Long Distance Fisheries Advisory Council
LDCs	Least Developed Countries

Acronym	Definition
MPA	Marine Protected Area
MSFD	Marine Strategy Framework Directive
MSP	Maritime Spatial Planning Directive
NASCO	North Atlantic Salmon Conservation Organization
NEAFC	North-East Atlantic Fisheries Commission
NGO	Non-Governmental Organisation
OECD	Organisation for Economic Co-operation and Development
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RFMOs	Regional Fisheries Management Organisations
RSCs	Regional Sea Conventions
SDG	Sustainable Development Goal
SFPAs	Sustainable Fisheries Partnership Agreements
SIDS	Small Island Developing States
TFEU	Treaty on the Functioning of the European Union
UNCLOS	United Nations Convention on the Law of the Sea
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNSD	United Nations Statistics Division
WFD	Water Framework Directive
WTO	World Trade Organisation
WWF	World Wildlife Fund

Introduction

This document presents the supporting material that was developed in the context of the study "Assessment of the existing EU policy tools in the field of Sustainable Development Goal (SDG) 14 and other ocean-related Agenda 2030 targets" [ISBN 978-92-9460-564-1], available through the publications office of the EU.

This document includes:

- Appendix 1 - Illustrations and narratives of interlinkages between ocean-related targets
- Appendix 2 – High-level assessment of EU policy mapping
- Appendix 3 – High-level assessment of Member States' policy mapping
- Appendix 4 – Quantitative assessment of SDG14 indicators
- Appendix 4 – Contextual factors at EU sea basin level
- Appendix 6 – Summary note of Member States' survey
- Appendix 7 – In-depth assessments

Appendix 1: Illustrations and narratives of interlinkages between ocean-related targets

Introduction

The following pages show and describe the ocean-related targets that were identified as part of this study and their interlinkages. The goal of this task is to identify a list of all ocean-related targets in the Agenda 2030. To this end a complete list of ocean-related targets, signified by linkages with SDG14 targets, is developed.

It should be noted that there are several ways of defining what "interlinkages" mean and in the literature, there are already a few other papers available that map links between SDG targets or the goals itself.

The approach chosen for this study was to map linkages not between the 17 SDGs themselves but rather at target level to ensure highest granularity of findings.

To this end, upstream targets and downstream targets were identified. Their definitions are summarised below.

Upstream targets are those which, when achieved, will have an impact on SDG14 targets.

Downstream targets are those which are impacted by the achievement of SDG14 targets.

While the mapping at target level allows high granularity, due to the nature of the SDGs, some Goals were not found to be interlinked since no direct relation could be identified at target level.

The study authors acknowledge, however, that other Goals are relevant for the wellbeing of the oceans which were not identified through the mapping at target level.

Those include the following.

SDG 7 Ensure access to affordable, reliable, sustainable and modern energy for all

Striving for sustainable energy is closely linked to SDG13 and as such to efforts of reducing GHG emissions and resulting acidification of the oceans

SDG 10 Reduce inequality within and among countries

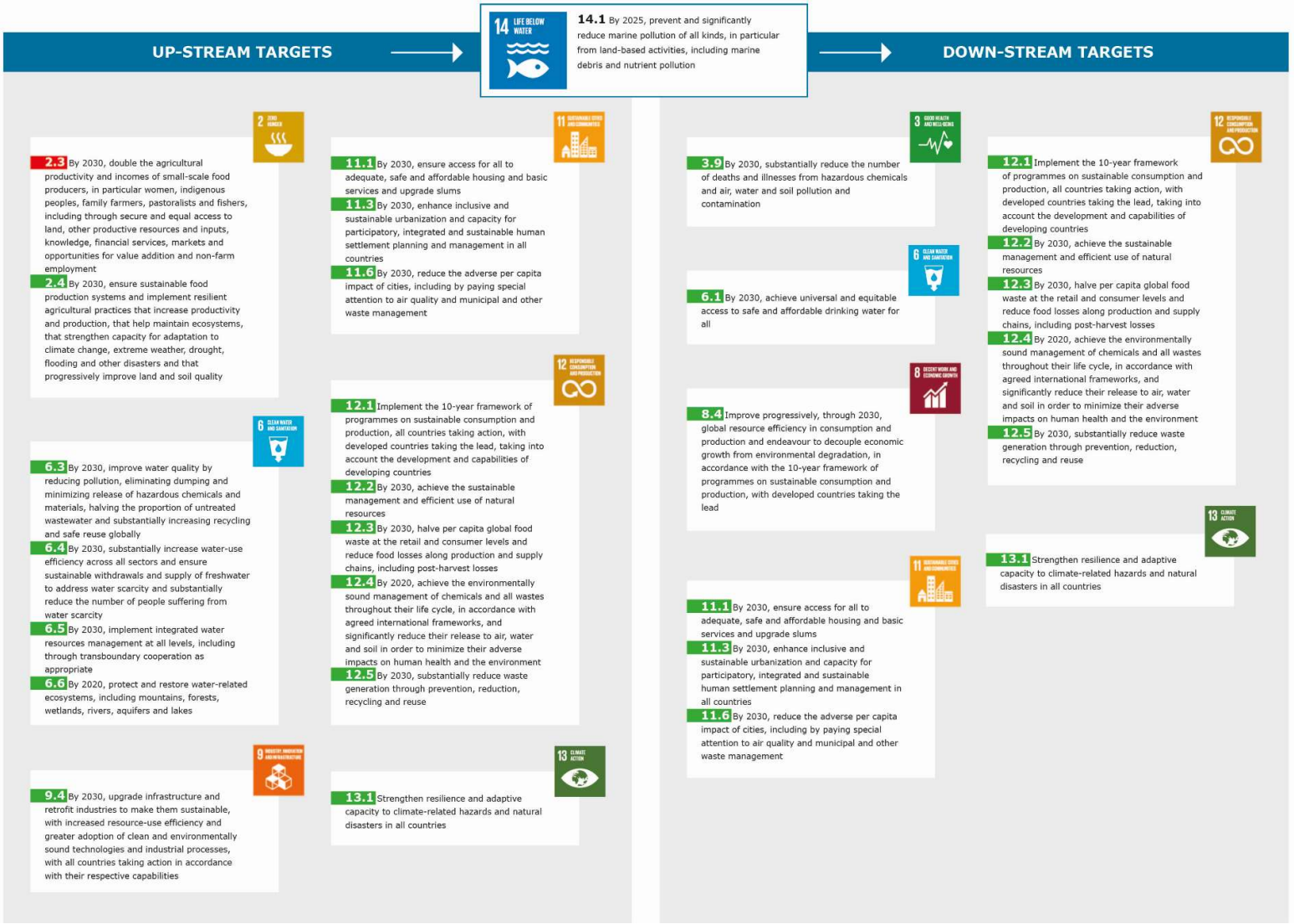
Inequalities are also an important factor for marine related topics.

SDG 17 Strengthen the means of implementation and revitalize the global partnership for sustainable development

Global partnerships are a crucial factor for achieving wellbeing of the oceans.

Legend

- **Positive interaction**: the achievement of a specific target enables the achievement of the other
- **Negative interaction**: The achievement of a specific target constraints the achievement of the other
- Interaction between targets can be **both positive and negative** at the same time


UP-STREAM TARGETS
14 LIFE BELOW WATER
14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution
DOWN-STREAM TARGETS
2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment
2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities
11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
11.6 By 2030, reduce the adverse per capita impact of cities, including by paying special attention to air quality and municipal and other waste management
12.1 Implement the 10-year framework of programmes on sustainable consumption and production, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries
12.2 By 2030, achieve the sustainable management and efficient use of natural resources
12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment
12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all
8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead
11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
11.6 By 2030, reduce the adverse per capita impact of cities, including by paying special attention to air quality and municipal and other waste management
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12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

SDG14 14.1 "By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution".

SDG2 End hunger

Upstream: doubling agricultural productivity (2.3) can significantly impact freshwater sources (e.g. through agricultural runoff and discharge of nutrients and pesticides, excessive use of fresh water), and subsequently cause increased levels of eutrophication in marine waters. This negative impact could instead be countered if agricultural practices were to be sustainable and resilient (2.4).

SDG3 Good health and well-being

Downstream: action to reduce marine pollution can help reduce the number of deaths and illnesses caused by the contact with or ingestion of chemicals and harmful toxins that are currently present in marine waters or in fish products (3.9).

SDG6 Clean water and sanitation

Upstream: efforts aimed at improving water quality by tackling land-based pollution (6.3), at increasing water-use efficiency (6.4) and at protecting and restoring inland water bodies (6.6) would have positive impacts on marine waters. These actions, especially when complemented with integrated water resources management practices (6.5), can positively contribute to reducing marine pollution.

Downstream: cleaner oceans would support the supply of clean drinking water (6.1), especially in those areas where drinking water is sourced via the desalinisation of marine water.

SDG9 Infrastructure and industrialization

Upstream: An upgrade of infrastructure and industries through clean and environmentally sound technologies to make them more sustainable and resource-efficient (9.4) can reduce pollution influx into the oceans.

SDG11 Sustainable cities and communities

Upstream: To effectively prevent and reduce marine pollution, cities are an important driver. About 65% of all megacities worldwide are located in coastal areas. Basic public services such as treatment of urban wastewater and waste management are a necessity for reducing discharge of debris and pollutants into the oceans (11.1 and 11.6). Sustainable urbanisation driven by strong planning and management capacities are key to achieving those services (11.3).

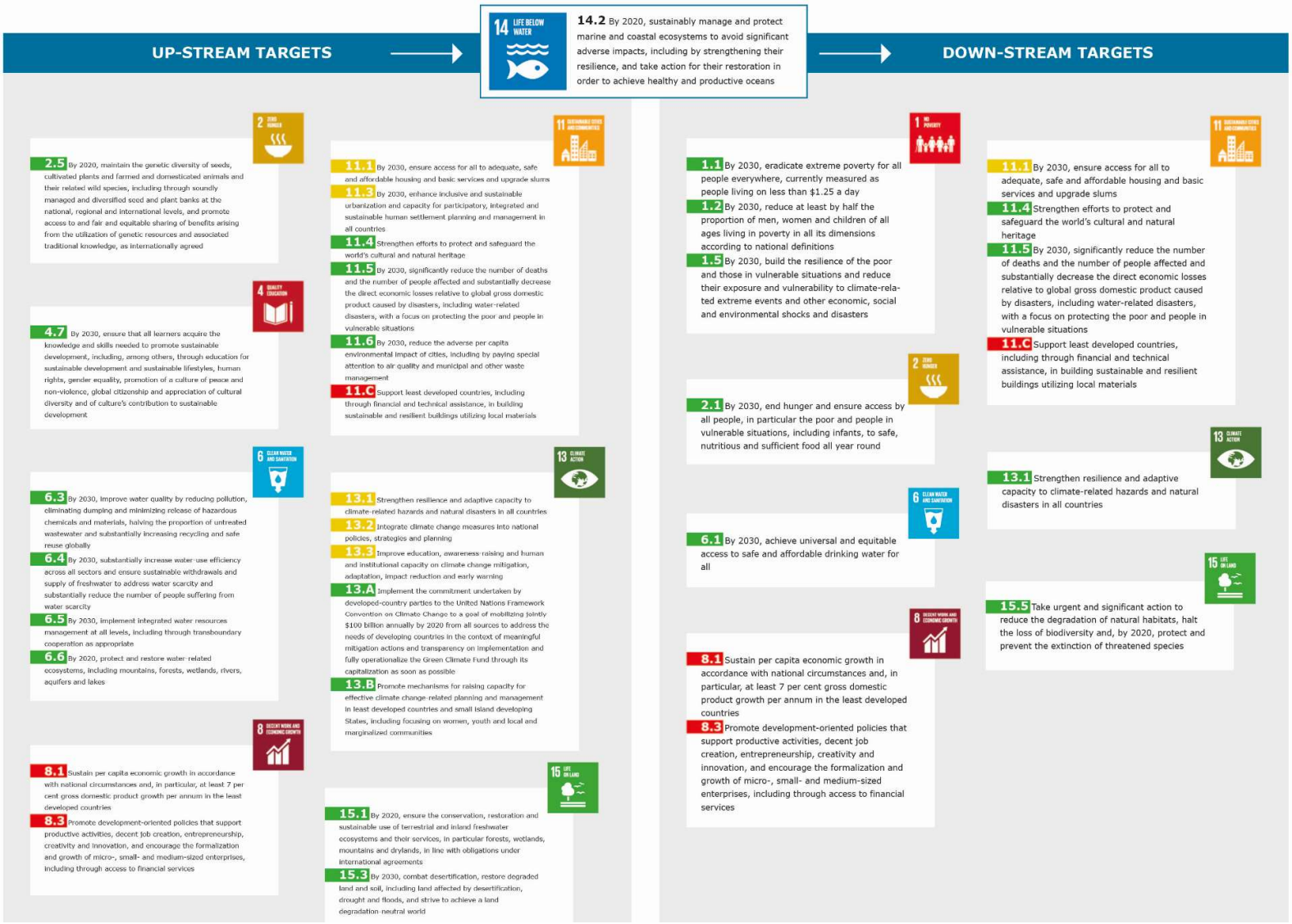
Downstream: This relation is bi-directional. Efforts to prevent marine pollution (e.g. integrated coastal management, maritime spatial planning) go hand in hand with the achievement of the targets above and require an integrated planning and management approach between urban areas and the ocean. Actions to tackle marine pollution under target 14.1 reinforce and overlap with actions to ensuring safe housing, basic services and upgrading slums (11.1).

SDG12 Responsible consumption and production

Upstream: Sustainable consumption and production patterns (in agriculture, industry, private households) (12.1, 12.2) can help prevent and reduce marine pollution. Land-based pollution, such as nutrients from poor agriculture practice and waste management, has a strong impact on the marine environment. A reduction of marine pollution can be achieved through better waste management and sustainable chemical policies, environmentally sound management of chemicals and waste (12.4) and a move towards a circular economy (12.5). A reduction in food waste (12.3) at the retail and consumer level will support more sustainable, less output-orientated forms of agriculture (e.g. organic or small holder farming) and so reduce land-based pollution, such as from nutrients.

SDG15 Life on land

Upstream: efforts to conserve and restore inland freshwater ecosystems (15.1) and to combat land and soil degradation (15.3) will contribute to reducing impacts on marine waters, thereby contributing to less polluted oceans.


UP-STREAM TARGETS
14 LIFE BELOW WATER
14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans
DOWN-STREAM TARGETS
2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed
4.7 By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development
6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries
8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services
11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage
11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
11.C Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
13.2 Integrate climate change measures into national policies, strategies and planning
13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
13.A Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible
13.B Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities
15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements
15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world
1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day
1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters
2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all
8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries
8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services
11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage
11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
11.C Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

SDG14.2 "By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans."

SDG1 End poverty in all its forms everywhere

Downstream: The protection, restoration and sustainable management of coastal and marine areas helps enhancing biodiversity and fish stocks, therefore improving the productivity of the oceans and increasing the related economic benefit for small-scale fishers. Healthy oceans and coasts will also stimulate tourism and increase potential for blue carbon markets, further contributing to reducing poverty (1.1, 1.2). Some types of coastal habitats such as mangrove forests and saltwater marshes can protect homes, communities, infrastructure and businesses from extreme climate-related events such as coastal flooding and storm surges. Sustainably managed marine and coastal ecosystems can thus help reduce the vulnerability of poor people to natural hazards and by that help reducing negative impacts of climate change (1.5).

SDG2 End hunger

Upstream: efforts to maintain the genetic diversity of different plants and animal species, including marine species (2.5 (including through marine protected areas), will help building and maintain healthy and productive marine and coastal ecosystems.

Downstream: sustainably managed and healthy oceans are associated in enhanced fisheries yields, which in turn will support food security and nutrition (2.1) of coastal communities.

SDG4 Quality education

Upstream: improving and expanding education opportunities for sustainable development (4.7), including ocean literacy for the sustainable management of marine and coastal ecosystems, can stimulate compliance with measures adopted to protect marine and coastal ecosystems, and it can also provide tools for ecosystem managers and material for capacity-building in ecosystem management.

SDG6 Clean water and sanitation

Upstream: Efforts to improve water quality by reducing pollution, eliminating dumping and minimising the release of hazardous chemicals and materials (6.3) will benefit the health of marine and coastal ecosystems. In addition, reducing the use of fresh water (6.4) will favour the maintenance of ecological flows, which in turn will have a positive effect on ecosystem quality, including on marine and coastal ecosystems. Given the strong interrelation between land and ocean ecosystems through the water cycle, the implementation of integrated water resources management (6.5) and the protection and

restoration of water-related ecosystems on land (6.6) will enhance the quality marine and coastal ecosystems.

Downstream: where seawater is used through desalinisation, good quality of marine waters will increase access to safe and affordable drinking water (6.1).

SDG8 Decent work and economic growth

Upstream: the increase on per capita economic growth and job opportunities (8.1, 8.3) might increase the pressures on marine and coastal ecosystems, e.g. in terms of increased resource extraction. Avoiding this requires the decoupling of economic growth from environmental degradation and by promoting growth through decent work mindful of the environment.

Downstream: taking measures to protect and restore marine and coastal ecosystems might entail some restrictions for economic activities and therefore limit some opportunities for economic growth and job creation for coastal communities (8.1, 8.3). However, this will be partly countered by the creation of different economic opportunities such as through coastal tourism or renewable energy production which also entails the chance to create jobs with higher quality than those foregone.

SDG11 Sustainable cities and communities

Upstream: due to the strong interactions between land-based activities and the health of marine ecosystems, especially if no integrated approaches are pursued., the development of settlements and infrastructure (11.1, 11.3, 11.c) can negatively affect the health of the oceans, On the other hand, the preservation of natural heritage (11.4), the improvement of communities' resilience to disasters (11.5) and of air quality and waste management in cities (11.6) will have beneficial effects on the quality of the marine ecosystem.

Downstream: the sustainable management of coastal ecosystems can reinforce the achievement of various SDG11 targets, including the safeguarding of coastal natural heritage (11.4) and the reduction of the vulnerability of coastal communities to disasters (11.5). In turn, the protection of these ecosystems and resources might require restricting urbanisation processes, thereby potentially limiting options for ensuring housing for all (11.1) in coastal areas which often are among those with the highest population density. Also, local resource extraction for housing (11.c) could be influenced by strong coastal protection measures.

SDG13 Climate Action

Upstream: marine and coastal ecosystems are heavily influenced by climate change and the impacts of greenhouse gasses, including through phenomena such as ocean warming and stratification, ocean acidification, sea level rise and extreme events. As a consequence, progress in achieving SDG13, in particular in terms of enhanced adaptive capacity (13.1), will benefit the entire ocean system and it may support sustainable ocean management and conservation. On the contrary, policies and measures taken to mitigate or adapt to climate change that fail to take ocean protection and conservation

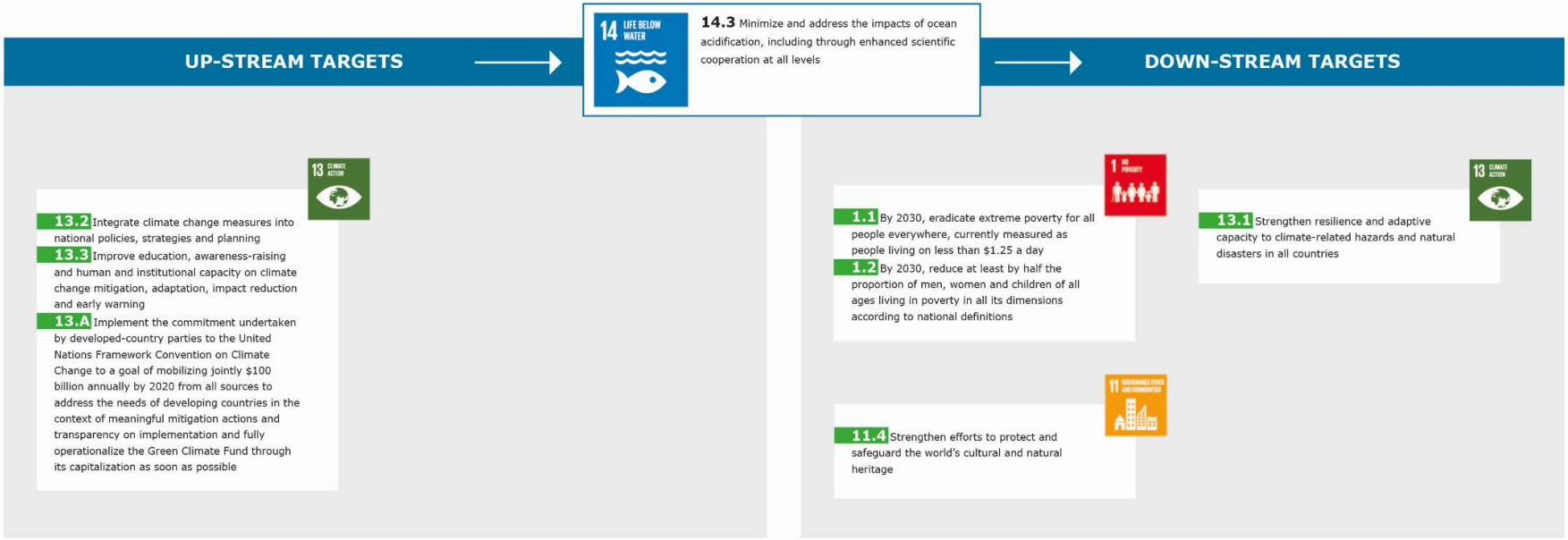
appropriately into account, e.g. by structural protection measures against coastal flooding (13.2), could counteract efforts made to achieve SDG14.

Downstream: oceans and coastal ecosystems have an important role in the regulation of the climate system, including through carbon sequestration (e.g. in the case of mangroves and other coastal wetlands). Healthy oceans contribute to building resilience in both human and environmental systems. Action taken to strengthen the health of coastal and marine ecosystems, including fish stocks, will reinforce the strengthening of environmental and societal resilience and adaptive capacities to climate change (13.1).

SDG15 Life on land

Upstream: given the strong existing interlinkages between fresh water and ocean systems, actions aimed at improving the sustainable use of terrestrial and freshwater ecosystems (15.1), particularly wetlands, and at combating droughts and coastal flooding (15.3) and reforestation and afforestation efforts) will benefit the conservation of downstream marine and coastal ecosystems.

Downstream: the status of coastal and marine ecosystems impacts terrestrial ecosystems through provision of habitat and food for terrestrial fauna (15.5).


UP-STREAM TARGETS
14 LIFE BELOW WATER
14.3 Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
DOWN-STREAM TARGETS
13.2 Integrate climate change measures into national policies, strategies and planning
13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
13.A Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible
1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day
1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage

SDG14.3 "Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels."

SDG1 End poverty in all its forms everywhere

Downstream: minimising and addressing the impacts of ocean acidification will improve the size, productivity and stability of fish stocks, particularly on organisms with calciferous exoskeletons like crustaceans and the marine food web in general, thereby sustaining the associated livelihoods and incomes (1.1, 1.2).

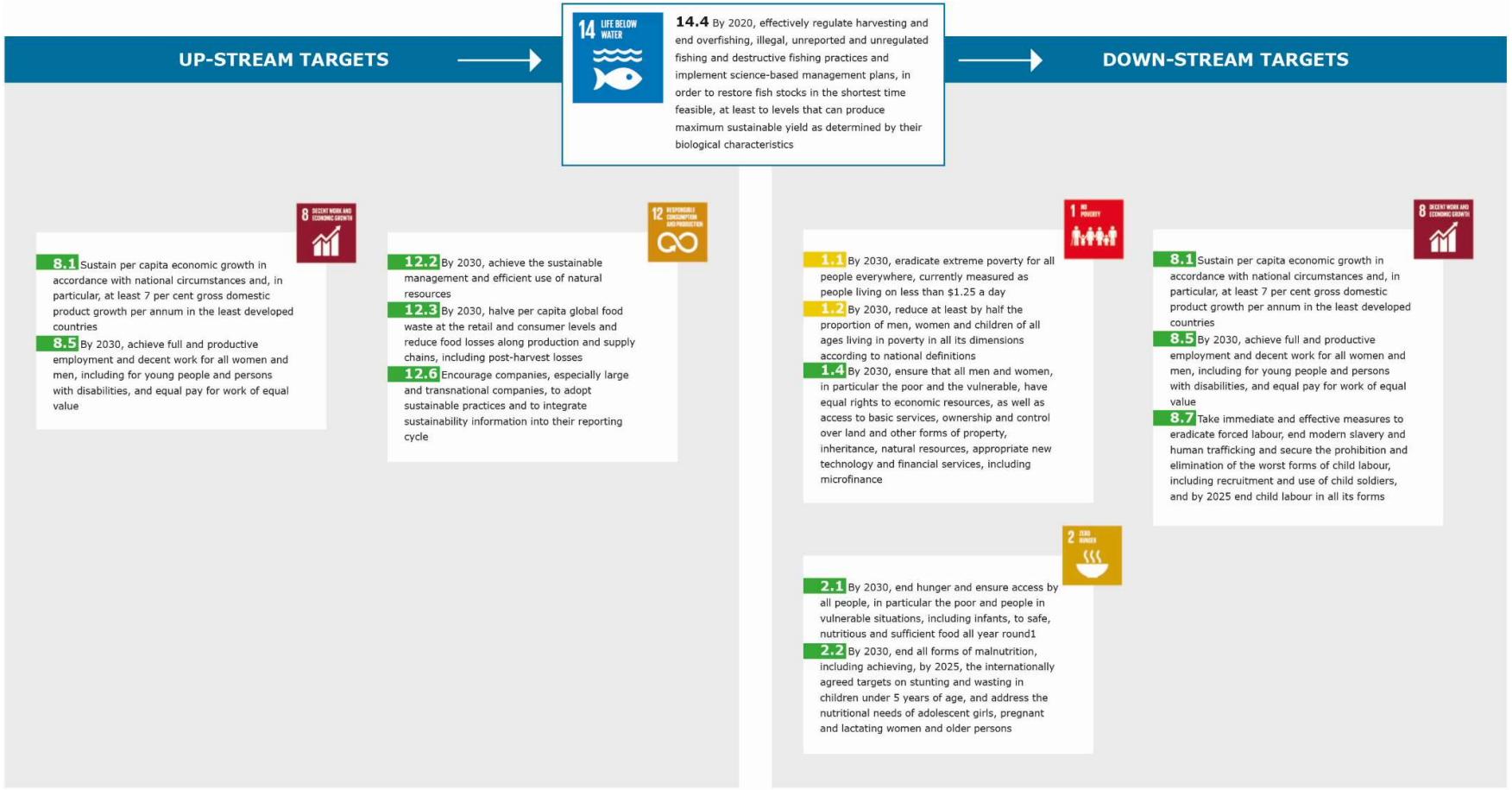
SDG11 Sustainable cities and communities

Downstream: tackling ocean acidification would allow to preserve and safeguarding of coastal and underwater natural heritage, including systems of coral reefs (11.4).

SDG13 Climate Action

Upstream: the achievement of targets under SDG13, both in terms of mitigation and adaptation (13.2, 13.3, 13.A) to climate change worldwide, will help fighting ocean acidification and therefore re-establishing the delicate pH balance that millions of marine species and organisms rely on. However, additional efforts might be needed to remove CO2 already in the atmosphere which, at its already high levels, will continue to dissolve into the oceans.

Downstream: actions taken to mitigate ocean acidification will strengthen the overall resilience and adaptive capacity of coastal systems to climate change impacts, including natural disasters (13.1).


UP-STREAM TARGETS
14 LIFE BELOW WATER
14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
DOWN-STREAM TARGETS
8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries
8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
12.2 By 2030, achieve the sustainable management and efficient use of natural resources
12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle
1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day
1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance
8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries
8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
8.7 Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms
2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round1
2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons

SDG14.4 "By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics."

SDG1 End poverty in all its forms everywhere

Downstream: the sustainable management, restoration and maintenance of fish stocks at levels that can produce maximum sustainable yield will have a positive impact on productivity, profitability and net economic benefits from fisheries, thereby reducing poverty levels in the communities that rely on them for their subsistence (1.1, 1.2, 1.4). or employment However, the restoration of certain fish stocks might be slow, thereby requiring strict regulations to persist for a long time, and this may delay poverty reduction efforts. (however, stocks at low levels cannot support reduction efforts) Activities aimed at adding value to the fish products also have a positive impact on reducing fishing effort, and they can create jobs and business opportunities in the post-harvest sector (e.g. processing and marketing). When these activities are undertaken via the use of newer and advanced technologies, not easily accessible to all, this might however threaten livelihoods and increase poverty in already vulnerable sectors of society (1.1, 1.2).

SDG2 End hunger

Downstream: rebuilding fish stocks to biologically sustainable levels and eradicating IUU fisheries increases fish availability and therefore improves food security for the communities that depend on these resources (2.1). both for subsistence as well as for income generation Responsible and sustainable fisheries also help addressing the nutritional needs of vulnerable people, as fish and fishery products are an important sources of relevant micronutrients (2.2). particularly for children and child-bearing women.

SDG8 Decent work and economic growth

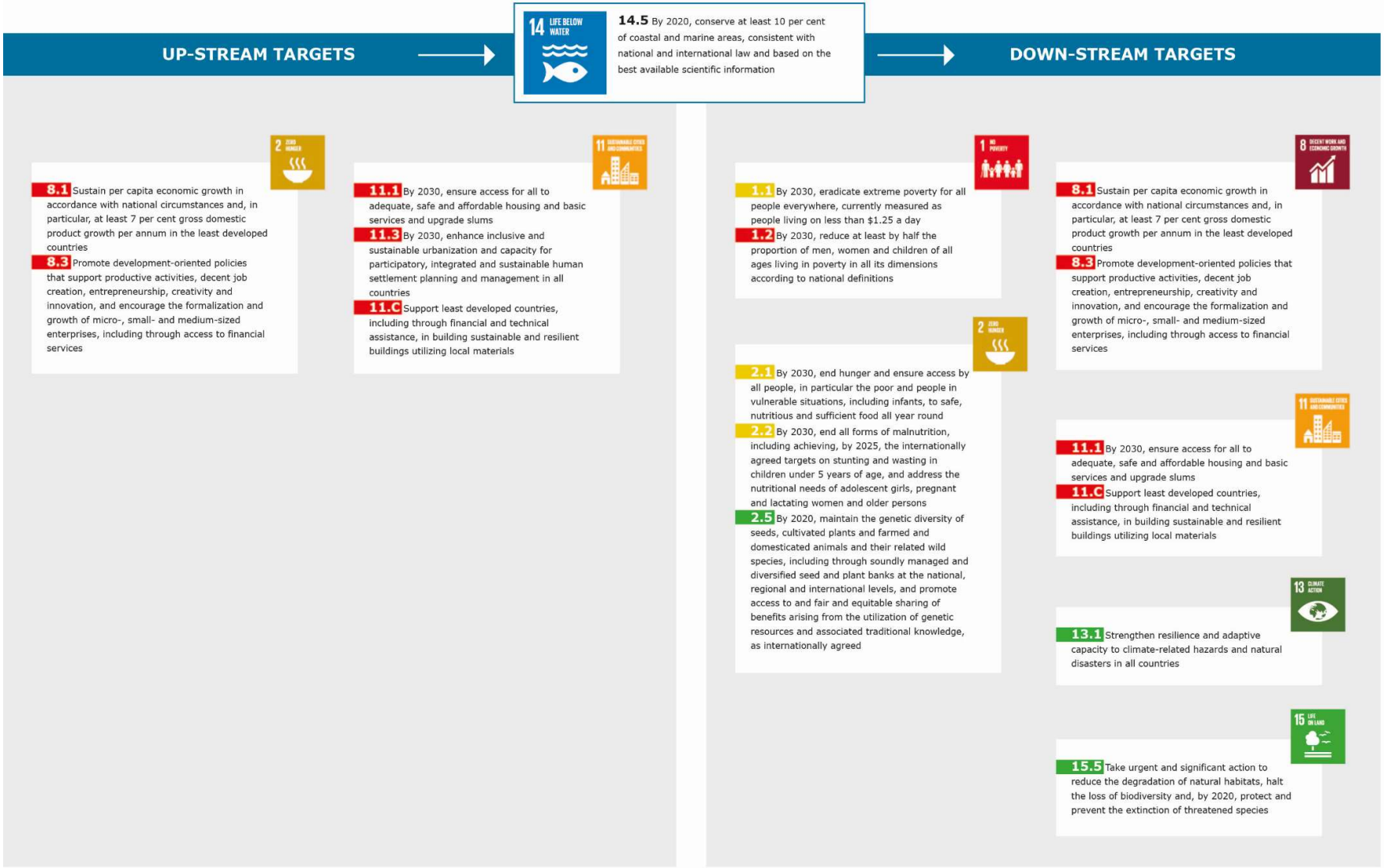
Upstream: sustained economic growth and measures aimed at increasing employment opportunities and establishing stringent rules to achieve decent working conditions (8.1, 8.5), including on fishing vessels, can have a positive effect on fishers and those employed in the wider fisheries sector. It might also have impacts in the fight against irregular, illegal and unreported fishing – and vice versa – since vessels involved in illegal fishing activities are more likely to be involved in forced labour/trafficking activities, as well as violate international human rights and labour standards

Downstream: Well-managed fisheries could increase the contribution of that sector to economic growth and job creation. At the same time, reducing fishing may be needed in some to address overfishing; tackling unsustainable fishing practices will provide the basis for sustainable economic growth and jobs in the long run (8.1). Efforts aimed at fighting

IUU fishing and at applying more stringent controls on ships are also likely help counter forced labour and child labour (8.7), tackle unfair labour practices, and promote decent working conditions (8.5) on vessels.

SDG12 Responsible consumption and production

Upstream: progress in the sustainable management and efficient use of natural resources (12.2) and in the fight against food loss along production and supply chains, including by reducing discards, by-catch, less destructive fishing practices (12.3) will benefit fish stocks and contribute to achieving sustainable harvesting and fishing practices, if measures are applied to the sector. If sustainability reporting is enhanced and becomes a widespread practice in the fishing sector (12.6), this might encourage fishing companies to adopt more sustainable fishing practices.


UP-STREAM TARGETS
14 LIFE BELOW WATER
14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information
DOWN-STREAM TARGETS
8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries
8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services
11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
11.C Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials
1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day
1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round
2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons
2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed
8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries
8.3 Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services
11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
11.C Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

SDG14.5 "By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information."

SDG1 End poverty in all its forms everywhere

Downstream: the creation of MPAs to restrict access to protected ecosystems can create or increase the competition for scarce resources and so constrain poverty reduction efforts (1.1, 1.2). However, protection of coastal and marine areas may impact the livelihoods and build resilience of local communities. However, this is partly countered by spill-over effects from such protected areas as well as through alternative economic opportunities such as tourism.

SDG2 End hunger

Downstream: establishing MPAs can enhance fish recruitment and productivity in areas adjacent to them, therefore increasing fish production and food security in the wider area (2.1, 2.2). Depending on their size, MPAs can also preserve genetic diversity within species (2.5). On the other hand, the designation of MPAs may limit access to food resources and areas available for aquaculture for the local communities (2.1, 2.2).

SDG8 Decent work and economic growth

Upstream: the promotion of economic activities at sea (8.1, 8.3), including in the proximity of a protected area, might threaten the effectiveness of MPAs to achieve their intended objectives, when these activities entail negative environmental impacts which are not effectively minimised or avoided.

Downstream: the implementation of MPAs might require the implementation of restrictions for specific economic activities in the area, therefore limiting opportunities for economic growth and job creation, especially for local communities (8.1, 8.3). although this can also create alternative opportunities including in conservation. It is important that the transition towards a climate-neutral economy happens in a fair way, leaving no one behind.

SDG11 Sustainable cities and communities

Upstream: Increased urbanisation processes (11.1, 11.3) can negatively affect marine conservation efforts, and the promotion of the utilisation of local materials for the construction of new buildings (11.c) might stimulate resource extraction within MPAs, therefore threatening the conservation of the protected ecosystems.

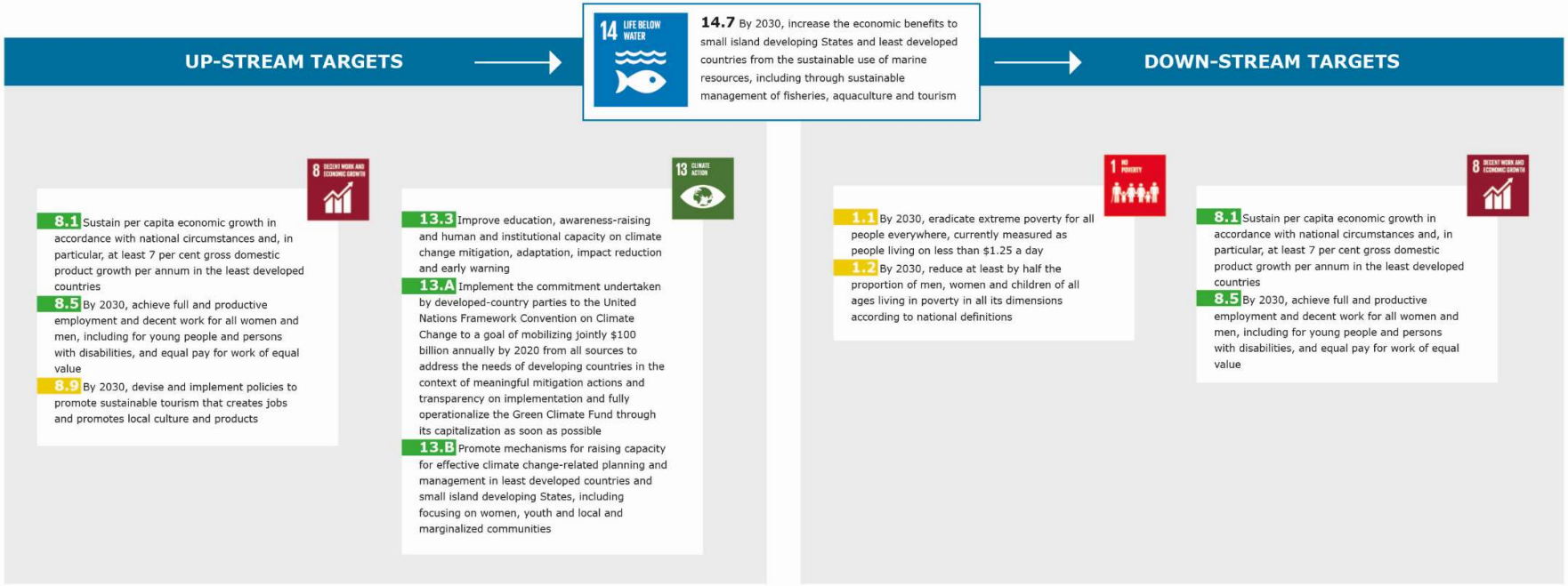
Downstream: The establishment of MPAs might constrain activities related to urbanisation processes (11.1), depending on the level of protection afforded to the specific areas, and the ability to minimise the impacts of such activities.

SDG13 Climate Action

Downstream: actions taken to protect the health of coastal and marine ecosystems, including via the establishment of MPAs, will strengthen environmental and societal resilience and adaptive capacities to tackle the impacts of climate change (13.1), for instance in the context of coastal flooding.

SDG15 Life on land

Downstream: the protection of marine resources trough marine protected areas impacts terrestrial ecosystems through provision of habitat and food for terrestrial fauna (15.5).


UP-STREAM TARGETS
14 LIFE BELOW WATER
14.7 By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
DOWN-STREAM TARGETS
8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries
8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
8.9 By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products
13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning
13.A Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible
13.B Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities
1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day
1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
8.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries
8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value

SDG14.7 "By 2030, increase the economic benefits to small island developing states and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism."

SDG1 End poverty in all its forms everywhere

Downstream: sustainable development of tourism, fisheries, coastal agriculture, and mariculture in SIDS can create jobs and increase income in coastal communities, therefore contributing to a reduction in the proportion of people living in poverty (1.1, 1.2). However, care needs to be taken to implement all the economic activities including aquaculture in an environmentally sustainable manner to reduce potential negative impacts on both communities and ecosystems.

SDG8 Decent work and economic growth

Upstream: an overall increase in economic growth and employment opportunities (8.1, 8.5), including in sustainable tourism (8.9) can create favourable conditions, for instance by making available sufficient financial resources, that would enable SIDs and LDCs to sustainably manage the marine resources available to them.

Downstream: the sustainable use of marine resources can reinforce economic growth and increase quality employment (8.1, 8.5) in SIDS, including by encouraging the development of sustainable economic activities such as sustainable tourism.

SDG13 Climate Action

Upstream: Progress in improving education and capacity for effective planning and management on climate change mitigation and adaptation (13.3) (13.B), in implementing the financial commitments under the UNFCCC (13.A) will positively influence the conservation of protected marine ecosystems, particularly in developing countries and Small Island Developing States (13.B).


UP-STREAM TARGETS
14 LIFE BELOW WATER
14.B Provide access for small-scale artisanal fishers to marine resources and markets
DOWN-STREAM TARGETS
13 CLIMATE ACTION
13.A Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible
13.B Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities
1 NO POVERTY
1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day
5 GENDER EQUALITY
5.A Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws
5.C Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels

SDG14.B "Provide access for small-scale artisanal fishers to marine resources and markets."

SDG1 End poverty in all its forms everywhere

Downstream: Providing access for small-scale artisanal fishers to marine resources and markets can help eradicating extreme poverty (1.1).

SDG5 Gender equality

Downstream: Facilitating access for small-scale artisanal fishers to marine resources and markets will most likely increase and enhance the quality of employment opportunities for small-scale fishers. This is likely to benefit women's access to economic resources (5.a), as the role of women in the processing and marketing of fishery products is crucial, particularly in Small Island Developing States, and this will in turn also promote their empowerment (5.c).

Appendix 2: High-level assessment of EU policy mapping

High-level assessment of EU policy mapping

Overview

We have identified in total 170 EU policy tools relevant for ocean-related targets. For all policy tools we have mapped in detail the respective contribution of the policy instruments to all SDG14 targets and upstream ocean-related targets[1].

For SDG14 targets we have identified a total of 383 links between the policies and the targets. For other ocean-related targets we have mapped 325 links. Thus, in total, we have identified 702 instances were policy instruments contribute to ocean-related targets.

As a reminder, the Table below shows the legend that was used for mapping the policies. The Table also shows the respective numbers of links.

Table 1 Overview of policy mapping nomenclature

Nomenclature	Explanation	Number
++	Policies that *specifically* aim at achieving the objective of the SDG target	377
+	Policies that *broadly* aim at achieving the objective of the SDG target	322
-	Policies that have a potential negative impact on the achievement of the SDG target	3

As can be seen, the policy framework can be in general described as very coherent. Only two potentially negative links have been mapped, with the EMFF and Common Agricultural Policy. In those cases, the negative link has been brought up by several stakeholders in consultations without being prompted and are also backed by literature.

For nine policy tools2 we have not mapped the contribution because the scope of those instruments was too broad and could not be mapped against single targets.

Types of polices

Figure 1 below shows the distribution of different type of policies.

The categorisation of different types is based on the Better Regulation Toolbox3, which specifies that Policy instruments fall into the following broad categories or combinations thereof:

- "Hard" legally binding rules;
- "Soft" regulation;
- Economic instruments; and

- Education and information.

As can be seen, the largest category are the "hard" legally binding rules and economic instruments. However, the number of education and information is very close with 43. The lowest number of policy tools is in the "soft" regulation category; however, the number is still relatively high with 37.

Figure 1 Number of policy tools per type

Number of policy tools per SDG14 target

When looking at the number of relevant policy tools per SDG14 target, it can be seen that there are large differences. A high number of policy tools (around 60, respectively) are relevant for 14.1, 14.2, 14.4 and 14.A.

The lowest number (8) target 14.6, i.e. the prohibition of harmful subsidies in the fisheries sector.

Overall, the results from the mapping match expectations as explained below.

SDG14.1 covers both, in-situ but also land-based pollution, and thus includes also most of the EU environmental acquis, including waste legislation, chemicals legislation, freshwater legislation, MSFD etc.

SDG14.2 contains most of the maritime policy tools, e.g. the MSFD – the environmental pillar of IMP, MSP Directive, and also relevant policy tools from the Common Fisheries Policy (CFP). There are RSCs to which EU is a party and thus they are a part of the EU Acquis – BC, OSPAR, HELCOM. In addition, many of the policy tools relevant for this target have a regional scope, e.g. sea basin strategies (see also analysis further below) or are EU voluntary contributions to UN Ocean Conference 2017.

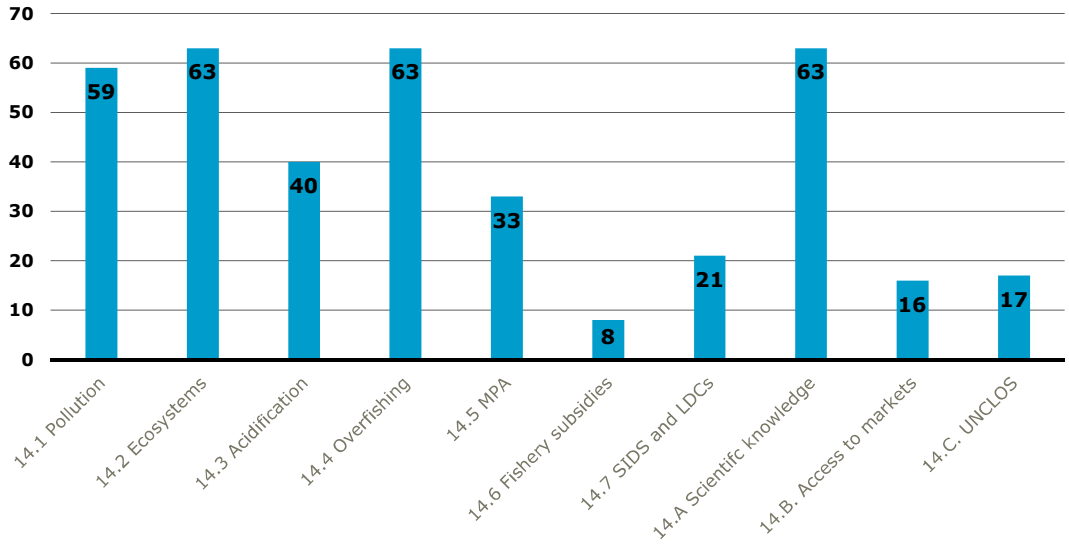
The high number of policy tools under SDG14.4 reflect the relatively complex regulatory framework in the CFP, selected environmental legislation and a number of other policy tools.

Finally, the high number of 14.A-related policy tools can be mostly attributed to the stringent streaming of research considerations into most major pieces of legislation, such as the MSFD or the CFP basic regulation.

The relatively low number of policy tools relevant for 14.3 can be attributed to the fact that, even though the climate change mitigation legislation is very comprehensive, it is mainly grouped under major legislative packages such as the Union climate and energy

package which is a set of binding legislation to ensure the EU meets its climate and energy targets[4].

Figure 2 Number of policy tools per SDG 14 target



Number of different types of links between policy tools and SDG14 targets

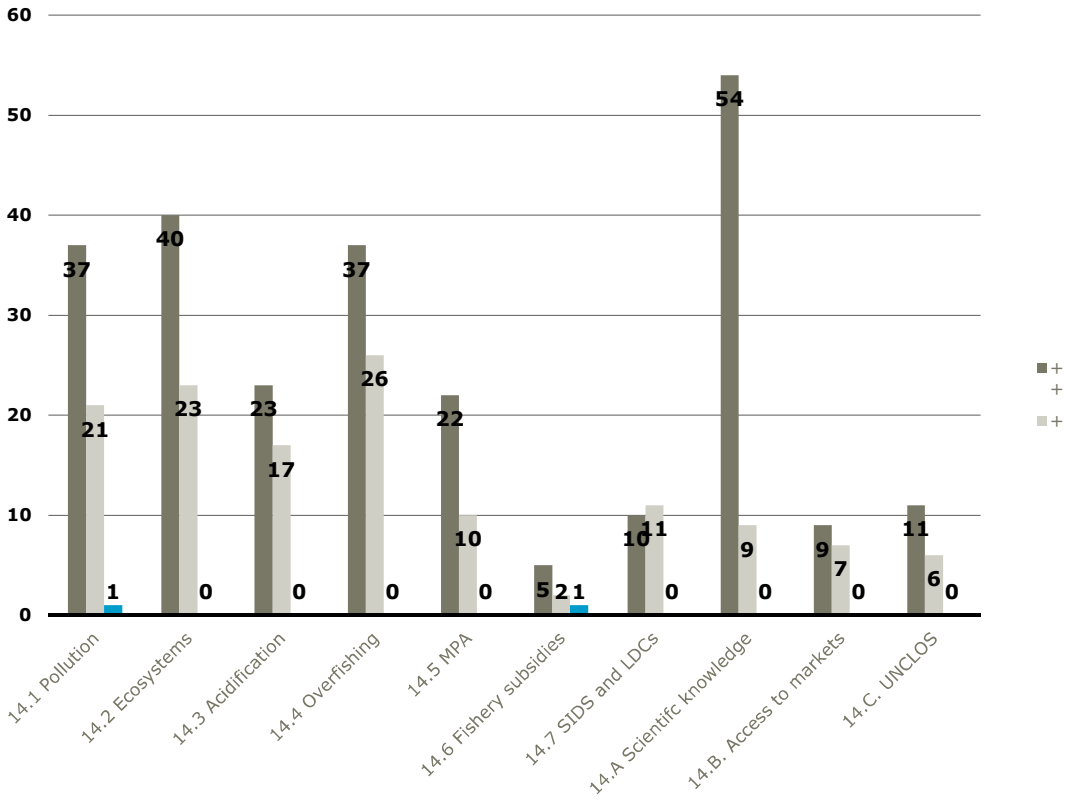
The Figure above shows the number of relevant policy tools per target (meaning the number of policy tools that have a link with that target). The Figure below goes into more detail by also showing the type on link5 between the policy and the target.

Number of different types of links between policy tools and SDG14 targets

The Figure above shows the number of relevant policy tools per target (meaning the number of policy tools that have a link with that target). The Figure below goes into more detail by also showing the type on link6 between the policy and the target.

As can be seen, for each target there is a relatively high number of policies that specifically aim at achieving the objective of the respective SDG14 target. The highest number of ++ links is for target 14.A. This can be explained by the fact that many policy tools have as one of the main objectives to foster and expand research on the respective areas.

Figure 3 Number of different types of links between policy tools and SDG 14 targets



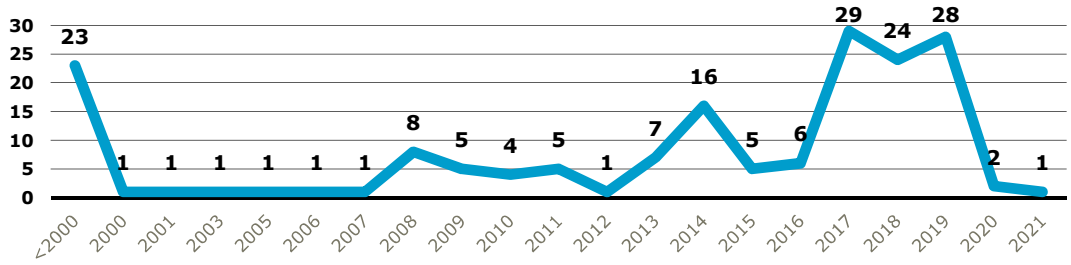
Timeline of adoption of policy instruments

For all policy tools, their date of adoption was included in the mapping. The Figure below shows the annual adapted policy tools throughout all 170.

There are two notable peaks. The first notable peak was in 20147. This year marked the beginning of a new multiannual financial framework during which a number of policy instruments were revised and renewed, and new policy priorities were coined.

The second peak was in 2017 and is mostly due to the high number of Voluntary Commitments pledged by the EU during the 2017 UN Ocean Conference.

Figure 4 Number of adopted policy tools per year

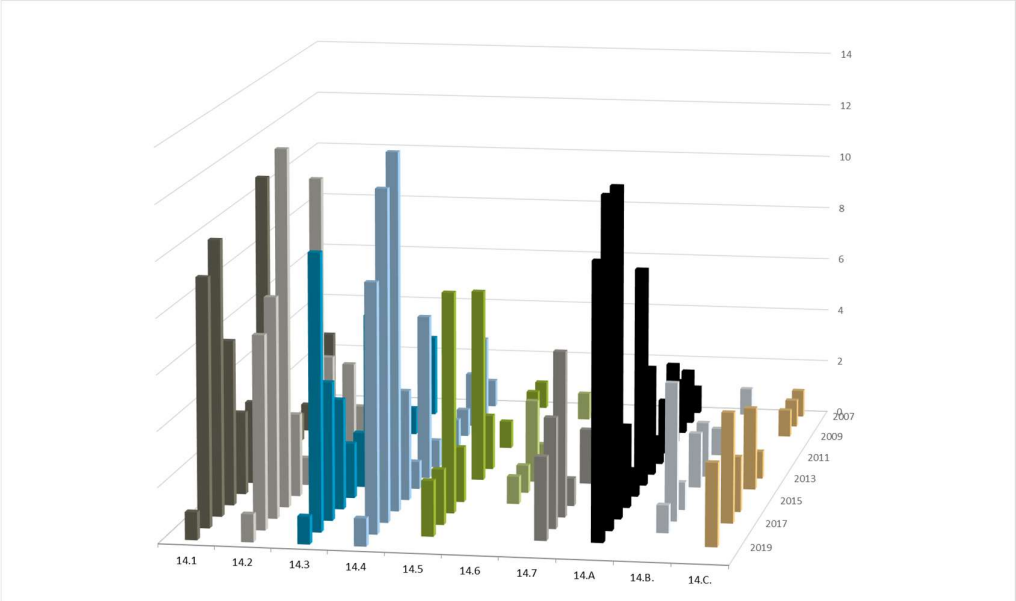


Timeline of relevance of adopted policy instruments

The Figure above shows the number of adopted policies per year. The Figure below adds a level of information by also showing for which SDG14 targets the adopted policies are relevant (i.e. by showing the relevant links with SDG14 targets).

As can be seen, while for SDG14.1, 14.2, 14.3 and 14.4 almost every year relevant policies have been adopted, the other targets are "patchier" in that regard.

Figure 5 Number of addition (through adoption of policy tools) of relevant links



Type of policy tools per target

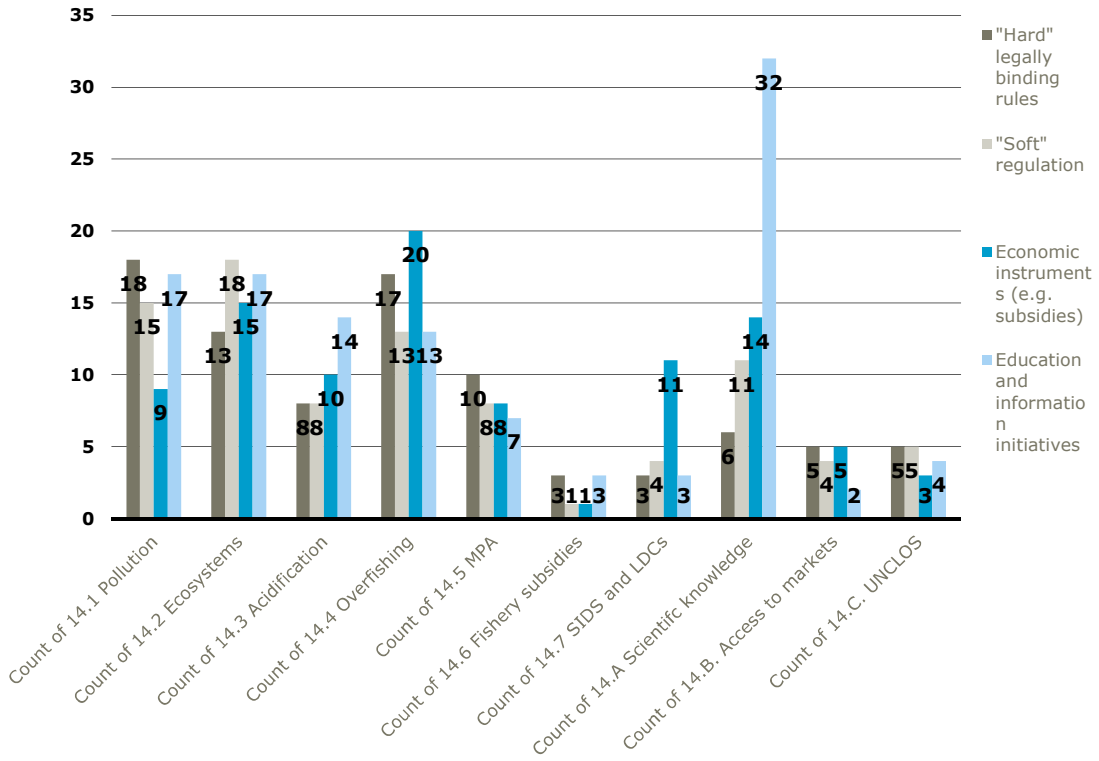
The Figure below gives a detailed account of the number of different policy tool types for each SDG14 target.

In general, the shares of types are relatively evenly distributed over the targets.

SDG14.1 and SDG14.4 have the highest total numbers of "hard" legally binding rules which reflects what was discussed above about the policy framework of those targets.

One notable statistic is the number of education and information initiatives for 14.A. This reflects the importance that the EU attributes to research since the topic is often specifically mentioned in roadmaps, communications, strategies etc.

Figure 6 Number of type of policy per target



Number of policy tools per geographical scope

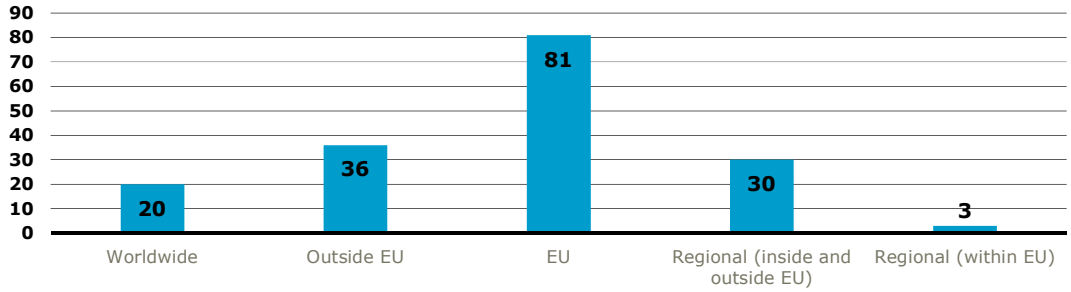
In the mapping the following categories of geographical scope were defined:

- **Worldwide** – Applies to policy tools that apply worldwide (e.g. the International ocean governance agenda or the EU Commission/IOC-UNESCO Joint Roadmap to accelerate Maritime/Marine Spatial Planning processes worldwide)
- **Outside EU** – Applies to policy tools only relevant for countries outside the EU, i.e. preliminarily development and trade related policy tools
- **EU** – Applies to the whole territory of the EU (most of the "hard legislation" of the EU[8])
- **Regional** (inside and outside EU) – Applies to policies tools which cover countries inside and outside the EU, i.e. preliminarily relating to shared sea basins (such as the Mediterranean Sea)

- **Regional** (within EU) – Applies to regional policy tools within the EU, i.e. concerning the Baltic Sea

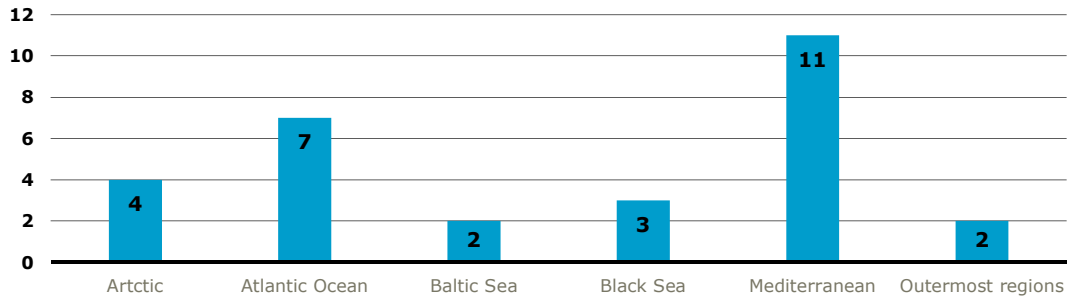
It can be seen that most policy tools have an EU scope; those reflect preliminarily EU legislation, i.e. "hard" legally binding rules.

Figure 7 Number of policy tools per geographical scope



Most of the regional policy tools (inside and outside EU, as well as only within EU) apply to sea basins. The Figure below shows the number of policy tools per sea basin. As can be seen, there is a notably high number of policy tools relevant for the Atlantic Ocean and the Mediterranean Sea compared to the other sea basins.

Figure 8 Number of policy tools per geographical scope



Geographic scope of policy tools per SDG14 target

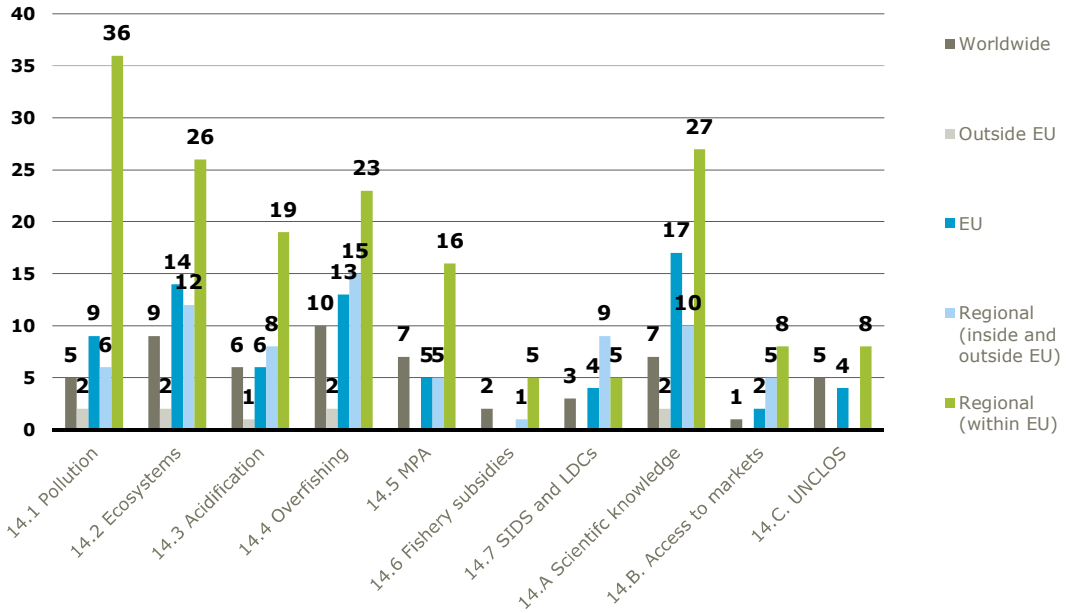
The following Figure shows that for all SDG14 targets, the highest number of policy tools applied to EU territory, i.e. internally.

This is especially notable for SDG14.1 and its comprehensive policy framework, covering all issues of environmental impacts.

Interestingly, for SDG14.2, SDG14.4 and 14.A the number of regional policy tools is almost as high respectively as with EU scope. The high numbers here show that those topics (i.e. protection of ecosystems, IUU and overfishing, and research) are frequently streamlined into policy tools with regional scope (i.e. sea basin strategies, macro-

regional strategies, other sea basin support tools) while pollution (and especially land-based pollution) is often not prominently tackled in those regional policy tools. This also reflects criticism voiced by stakeholders, that through focussing on sea basin approaches often the land-sea connections are not sufficiently taken into account.

Figure 9 Geographical scope of policy tools per SDG 14 target

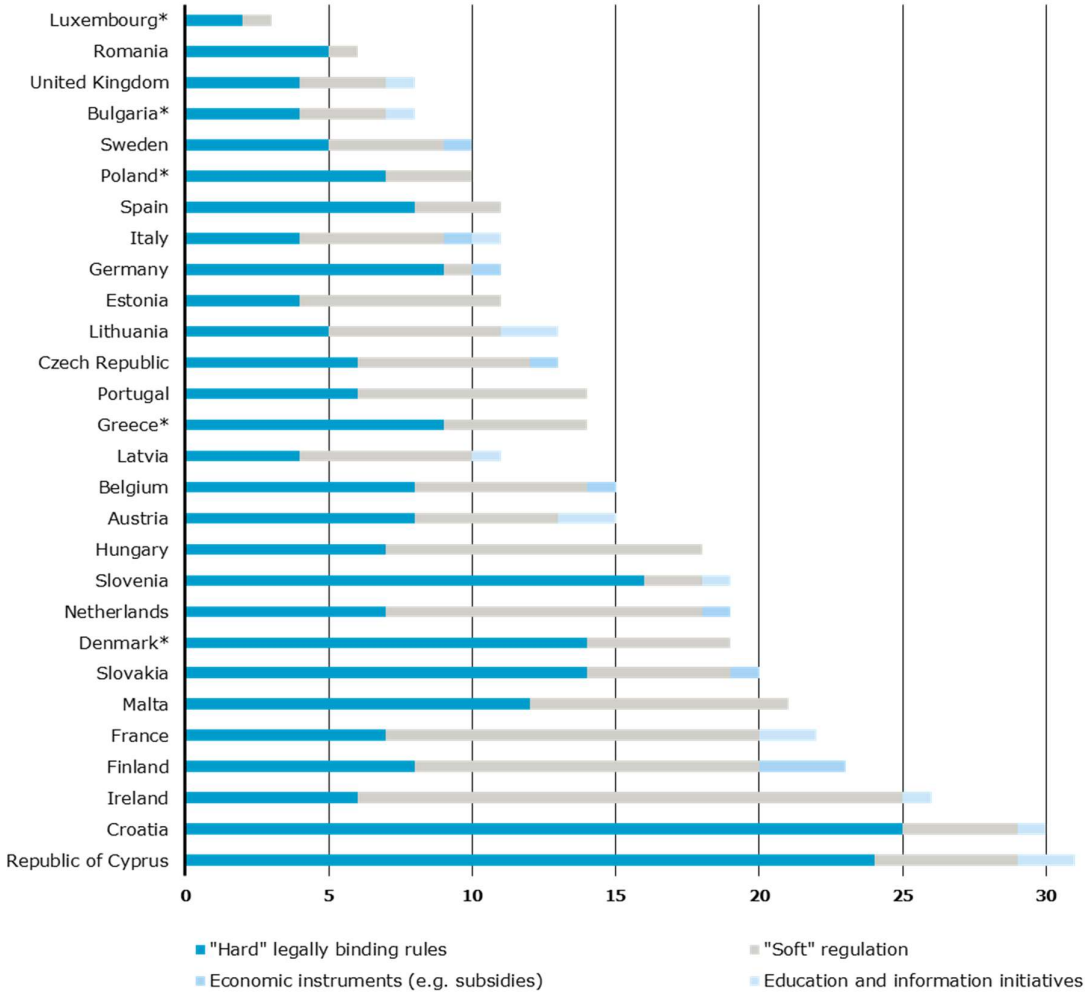


Appendix 3: High-level assessment of Member States policy mapping

High-level assessment of Member States policy mapping

A mapping of Member States' policies supporting the achievement of SDG14 and other ocean-related targets was performed in the course of the study, through a combination of desk research, interviews and email contact with representatives from national authorities within each of the Member States.

Figure 10 Overview of policies per country



Note:

The list of policies has been validated by most of the countries, however it is still possible that some policies might be lacking, therefore the list should be seen as non-exhaustive

** has not validated policy table*

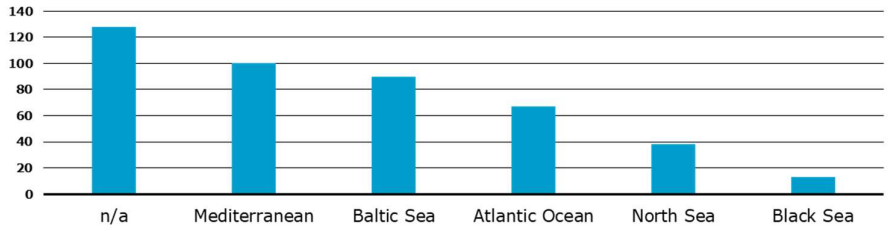
Figure 10 shows the type and total number of policies identified across all Member States. A total of 406 policies supporting the achievement of SDG 14 targets were mapped. Due to the overlap of different SDGs, some of these policies were also found to affect SDGs 2,6,8,11,12,13 and 15.

The purpose of Figure 10 is not to rank the Member States by total number of policies, and the amount of policies does not imply that more or less importance is attributed by a given Member State to specific SDGs. In fact, one policy can be very strict or effective, while other policies seem impressive by amount but lack effectiveness. Also, for some targets the EU has exclusive competence (e.g. those related to fisheries) and therefore it possible that less measures are adopted at the national level on these matters. Overall, countries that are more dependent on the ocean present a larger number of policies (with the possible exception of Hungary, a landlocked country). The reason for the high position of Hungary in the table above, is the inclusion of a large number of river-, landscape- and urban water management-related policies, which also have an effect on SDG14 targets.

The majority of the policies identified in the context of this mapping exercise are legally binding rules like laws, followed by soft regulation (e.g. strategy frameworks) and economic instruments. The most common tools are very traditional i.e. legislation – hard or soft. As will be seen later in the analysis, this legislation is also often quite old and linked to general maritime law. Overall, countries hardly use innovative means like economic instruments to implement SDG14, a finding which is also reflected in the results of the survey to Member States (see Appendix 6). SDG 14 is cross-cutting and multifaceted by definition, which is also shown by the large number of national departments involved in policy making related to it, as demonstrated by the Member States' responses to the online survey performed in the course of this study (see Appendix 6Figure 10). It is therefore uncertain whether the policy tools currently put in place by Member States are adequate and innovative enough to address the complex nature of ocean related targets.

The survey to Member States (see Appendix 6) outlined that behavioural change is needed to achieve improvement on the ocean-related targets. This is mirrored in the result of the Member States' policy mapping (see Figure 10), which indicate that very little education and information initiatives are undertaken to achieve SDG14, compared to other types of policies.

Figure 11 Overview of policies per Sea basin



The majority of the policies mapped did not show any particular relation to specific sea basins in Europe. This is due to the fact that a large number of policies identified either targeted the overall agricultural state of the Member States, the inland waters or the overall water quality, without mentioning any sea basin in particular.

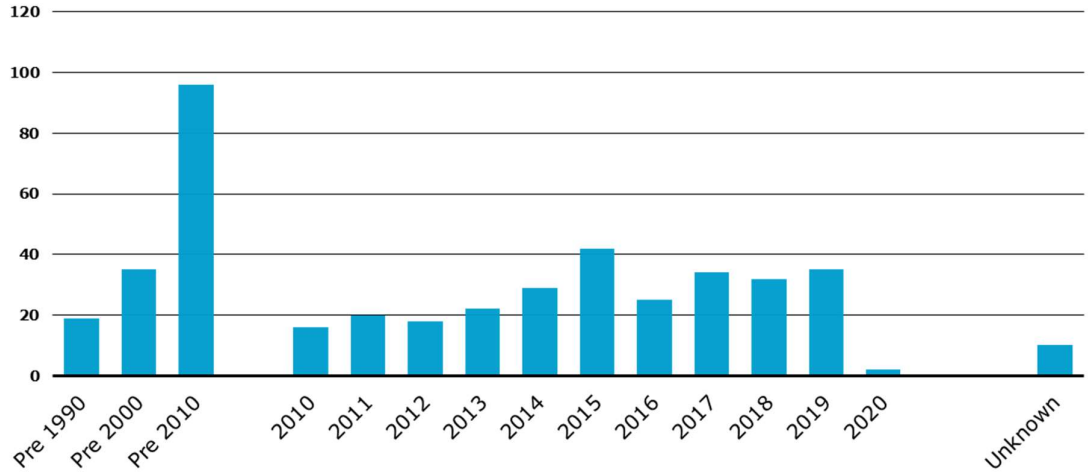
The sea basins with the highest coverage of policies were the Baltic and Mediterranean. This could be explained by the following considerations:

1. The fact that the UNEP Barcelona Convention is in place since 1975, almost immediately after the Stockholm Conference on Human Environment.

2. The existence of the General Fisheries Commission for the Mediterranean (GFCM), which is a regional fisheries management organisation that aims to ensure the conservation and the sustainable use of living marine resources as well as the sustainable development of aquaculture in the Mediterranean and Black Sea.

3. The strong focus of Baltic countries on the environmental state of the local ecosystem and the large number of Member States present on the shores of this sea basin. The same can be concluded for the Mediterranean where the economic importance of the coast and the sea, for maritime activities such as tourism and aquaculture is quite high for the countries in the region.

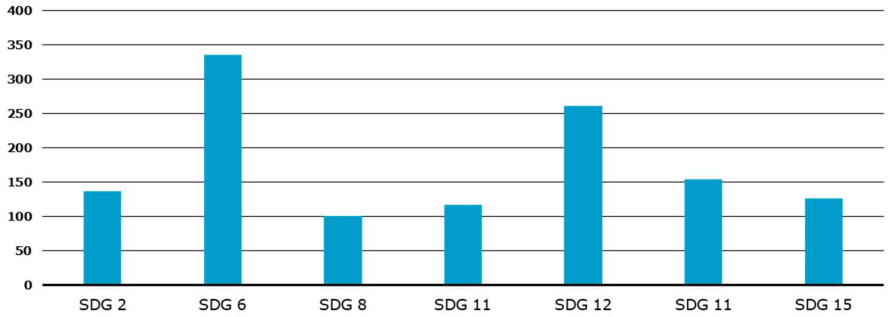
Figure 12 Overview of policies and their inception date



The data shows that 40% (165) of the mapped policies were developed before 2010. This indicates that an important part of the policies developed to safeguard the environment were not adopted to specifically address any of the SDG targets. This raises an issue linked to Figure 10 outlining the type of policy tools used i.e. mostly legal. These often outdated legislations must now tackle a growing and ever more complex problem.

The remainder of the policies is distributed relatively uniformly over the past decade. It is possible to see that post 2012, at the beginning of the SDG initiative, the number of policies launched per year is gradually increasing with a peak 3 years after the adoption of Agenda 2030. This would indicate that the SDG initiative had a positive impact on the adoption of national legislation, research initiatives and policies. An important note is that the recently adopted policies could take time to show their effect (as reflected in the results of the Member States survey, in Appendix 6), both in terms of behavioural change as well as in terms of measurable change for the achievement of the targets. Therefore, strong monitoring and action are required going towards 2030.

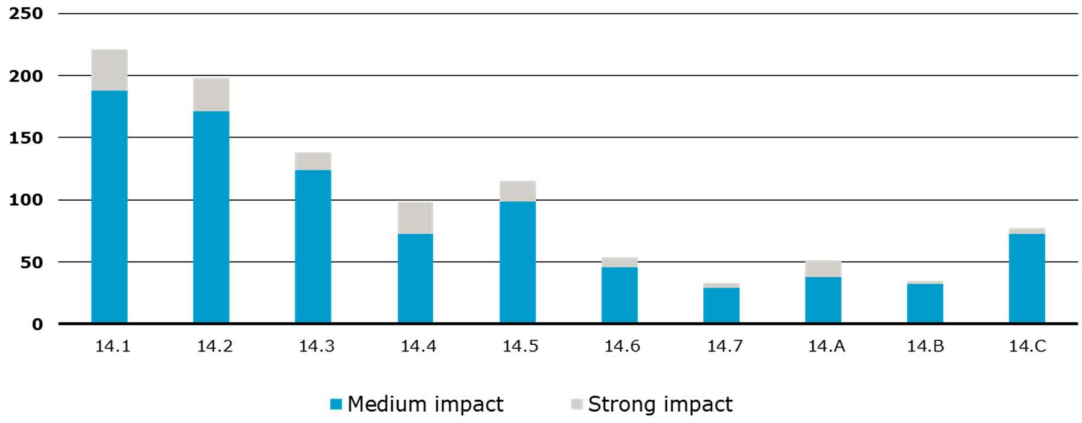
Figure 13 Overview of the number of policies per ocean-related SDG



Each of the policies in the database was mapped in order to reflect the impact it had on the SDG targets. Both medium and strong links to the different targets were identified. The SDG 14 was the main target object of the study. Other ocean-related targets were identified in the course of the study (see Appendix 1), and the relations between Member States' policies and these targets was also mapped. A large number of links was identified between national policies and SDG6 and SDG12, probably due to the natural link with environmental policy measures on water, water resources management, protection of water-related ecosystems and management of natural resources, management of chemicals and wastes and sustainable consumption.

Other links were identified between the national policies and SDG2, on zero hunger (link with fisheries), SDG12 on responsible production and consumption (fisheries and agriculture), SDG13 on climate action (overall topic overlap), SDG11 on sustainable cities and communities (urban water management) and SDG8 decent work and economic growth (link to fisheries).

Figure 14 Policy overview per SDG14 target



Most of the national policies currently in place contribute to the achievement of SDG14.1, namely "reduce marine pollution of all kinds". This stands to reason since this target interacts with different policies regarding marine and waste policy as well as circular economy and it is linked to the overall focus on plastic waste in the oceans.

SDG14.2 deals with coastal ecosystems and has a more general description (sustainably manage and protect marine and coastal ecosystems) than SDG14.5 which specifically indicates the protected area target (MSP). SDG14.3 deals with ocean acidity and links

to more general emission (acidic rain related) policies. SDG14.4 is fisheries related and overlaps with national fisheries regulation, as SDG14.6 and SDG14.7 but these are more specific in their goals (subsidies and Small Island developing States) and therefore less visible in the overview.

As for SDG14.a, on ocean research, little evidence of policies related to this target has been uncovered, which is also reflected in the low number of research projects mapped. This can be attributed to either less visibility or less focus on this at member state level. SDG14.b deals with small scale fisheries and is therefore not applicable to all Member States. SDG14.c is an indication of the number of counties actively accepting and implementing international law through legal, policy and institutional frameworks in their own policy agenda. Even though only 17% of the policies uncovered a link to this, ~50% of the Member States had at least one policy with this link and therefore took SDG14.c into account.

Appendix 4: Quantitative assessment of SDG14 indicators

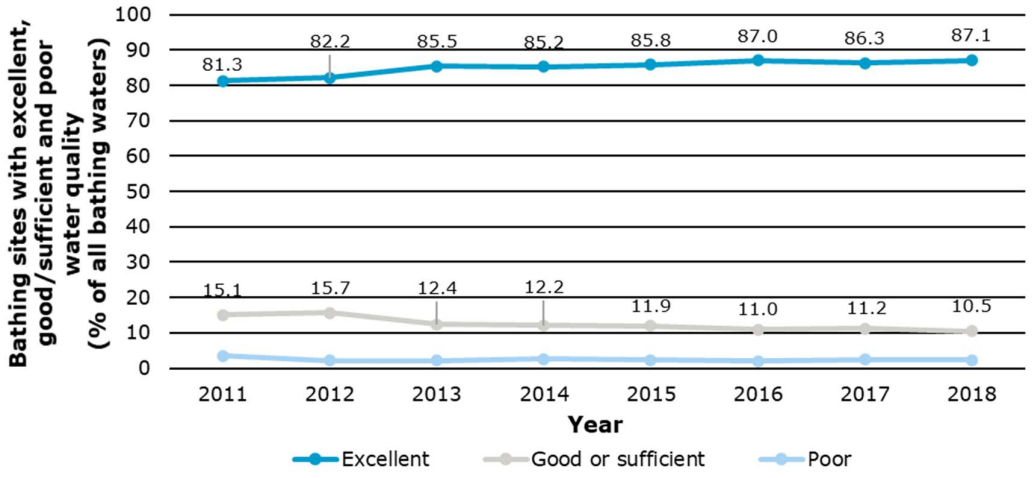
Quantitative assessment of SDG14 indicators

SDG14.1

SDG 14.1 aims to prevent and significantly reduce, by 2025, marine pollution of all kinds, including from land-based activities, including marine debris and nutrient pollution (A/RES/71/313). Coastal eutrophication can damage marine ecosystems and vital sea habitats as well as cause the spread of harmful algal blooms, with subsequent consequences for marine ecosystems, society and coastal communities in particular. The indicator to measure SDG 14.1 (Index 14.1.1) is the Index of Coastal Eutrophication (ICEP) and Floating Plastic Debris Density (FPDD). The ICEP sub-indicator (14.1.1a) refers to the inputs of nutrients (nitrogen, phosphorus and silica) from rivers; the FPDD sub-indicator (14.1.1b) refers to the modelled macro and micro plastics distribution in the ocean. Data collection for ICEP and FPDD will start in 2021, the full methodology for this indicator is available in UNEP (2018)[9], and the detailed metadata for this index is available in UNEP (2019)[10].

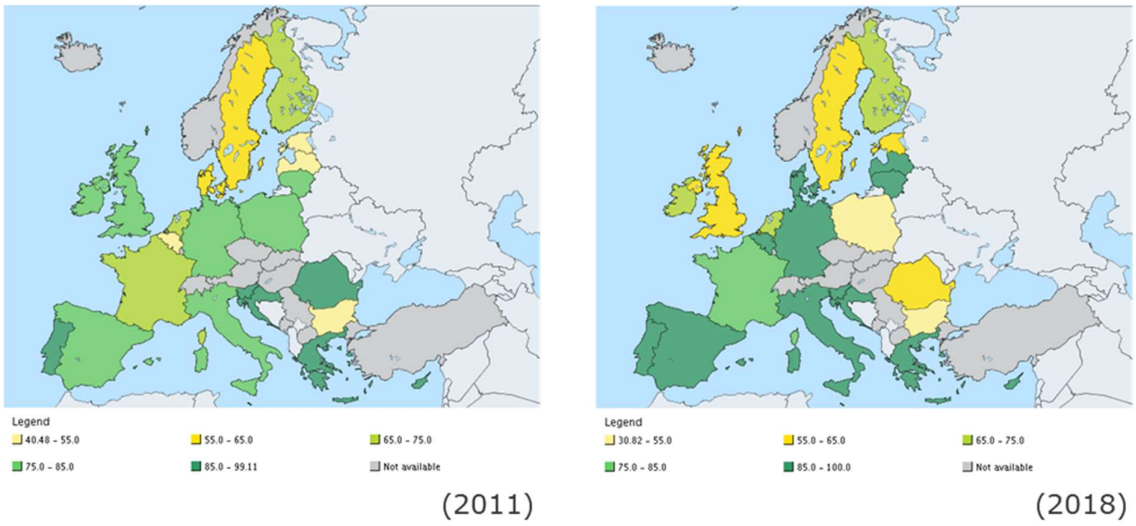
The European Environmental Agency (EEA) uses, for now, bathing water quality (BWQ) as a proxy for Index 14.1.1 (see Eurostat, 2020)[11]. Bathing water quality is assessed according to standards for microbiological parameters (intestinal enterococci and Escherichia coli), and data for water quality at bathing sites is based on Member State reporting under the Bathing Water Directive (BWD) and described in the annual Bathing Water report (e.g. EEA, 2019)[12]. The objective of the BWD is water quality at all bathing sites to be classified as at least 'sufficient'. As of 2021, EUROSTAT will use data from the Copernicus Marine Environment Service to produce the SDG14.1.1 indicator on eutrophication.

Figure 15 Proportion of coastal bathing sites with 'Excellent', 'Good/sufficient' and 'Poor' water quality for the EU Member States over the period 2011 to 2018 (source: Eurostat, 2020)



Over the period 2011 to 2018, the proportion of coastal bathing sites with at least good or sufficient water quality (i.e. 'Good or sufficient' plus 'Excellent') has increased from 96.4% in 2011 to 97.6% in 2018 – thus showing a development in line with the objective set in the BWD. Also the proportion of sites with excellent water quality has increased (from 81.3% in 2011 to 87.1% in 2018) while noting, though, that this figure has stabilized since 2016 and that the number of considered coastal bathing sites has decreased from 15,444 in 2011 to 15,009 in 2018. Thus, although the proportion of coastal bathing sites with, at least, sufficient water quality has increased, the proportion of coastal bathing sites with excellent water quality seems to be under pressure.

Figure 16 Proportion of coastal bathing sites with 'Excellent' water quality by locality in 2011 and 2018 (source: Eurostat, 2020)



At the EU country level (see Figure 16), it can be observed that between 2011 and 2018 the proportion of coastal bathing sites with excellent water quality has increased in Belgium, Denmark, Estonia, France, Germany, Italy, Latvia, Lithuania and Spain, while it has decreased in Ireland, Poland, Romania and the United Kingdom. This confirms that some countries are struggling with keeping-up excellent bathing water quality.

SDG14.2

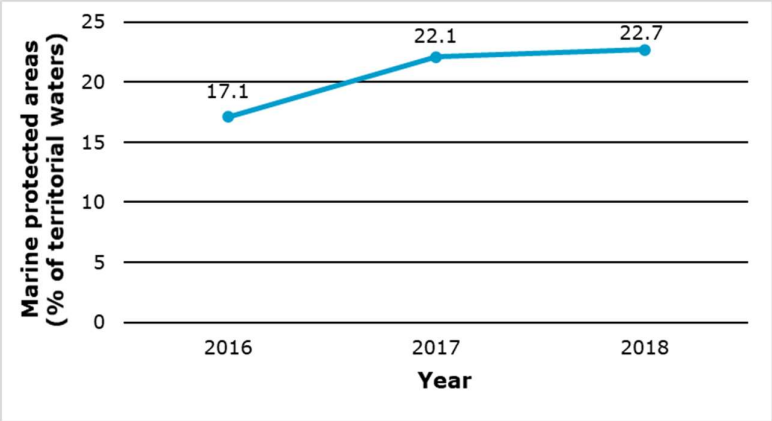
SDG 14.2 aims to sustainably manage and protect, by 2020, marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration as to achieve healthy and productive oceans (A/RES/71/313). The indicator to measure SDG 14.2 (Index 14.2.1) is the proportion of national Exclusive Economic Zones managed using ecosystem-based approaches, which is based on the regional Seas Coordinated Indicator 22 'Integrated Coastal Zone Management' (ICZM) or, alternatively, derived from Marine/Maritime Spatial Plans (MSPs). Data collection for this indicator will start in 2021, the full methodology for this indicator is available in UNEP (2018)13, and the detailed metadata for this index is available in UNEP (2019)14. A limitation of this index is that it only measures the policy formulation and not policy implementation.

The UK Office for National Statistics (ONS) uses, for now, the proportion of protected areas at sea as a proxy for indicator 14.2.1 (see ONS, 2020)1516. Since 2016, this proportion of marine protected areas in territorial waters is consistently collated by the World Bank (World Bank, 2020)17. Under the Convention on Biological Diversity, the EU has committed to ensuring the conservation of 10% of its coastal and marine areas by 2020 (EC, 2015)18.

The UK Office for National Statistics (ONS) uses, for now, the proportion of protected areas at sea as a proxy for indicator 14.2.1 (see ONS, 2020)1920. Since 2016, this proportion of marine protected areas in territorial waters is consistently collated by the World Bank (World Bank, 2020)21. Under the Convention on Biological Diversity, the EU has committed to ensuring the conservation of 10% of its coastal and marine areas by 2020 (EC, 2015)22.

Over the period 2016 to 2018, the proportion of marine protected areas in territorial waters has increased from 17.1% in 2016 to 22.7 in 2018. Hence, the development of this indicator is above the target of protecting 10% of coastal and marine areas as well as above that achieved globally (11.4% in 2018).

Figure 17 Proportion of protected areas in territorial waters for the EU Member States over the period 2016 to 2018 (source: World Bank, 2020)



Across EU countries, large differences in the proportion of marine protected areas in territorial waters can be observed while noting that no significant changes occurred between 2016 and 2018. In 2018, 8 countries (35%) had less than 10% of protected areas in their territorial waters, while 7 countries (30%) had more than 25% of protected areas in their territorial waters[23].

SDG14.3

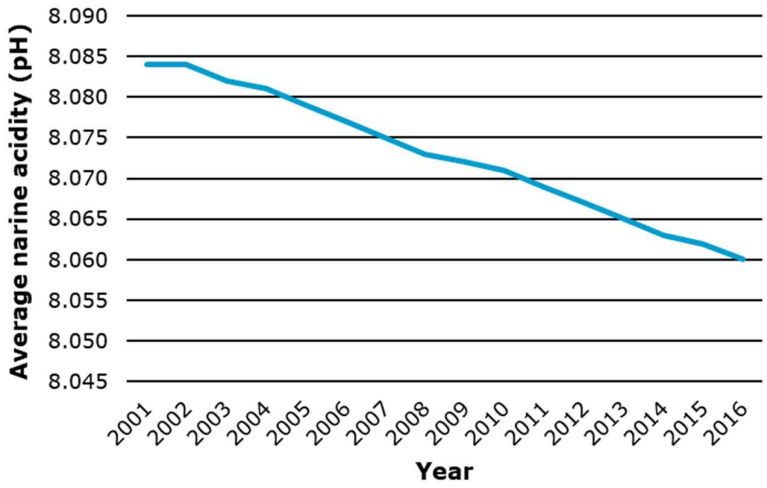
SDG 14.3 focusses on minimising and addressing the impacts of ocean acidification, including through enhanced cooperation at all levels. Ocean acidification is caused by the uptake of atmospheric CO2 by the ocean, which changes the chemical composition of the seawater. Long-term observations of ocean acidification over the past 30 years have shown an average increase of acidity of 26 per cent since pre-industrial times, and at this rate, an increase of 100 to 150 per cent is predicted by the end of the century,

with serious consequences for marine life. The indicator to measure SDG 14.3 (Index 14.3.1) is the average marine acidity (pH) measured at an agreed suite of representative sampling stations (A/RES/71/313). The detailed metadata for this index is available in UNEP (2019)24.

Various organizations, including the Copernicus Marine Environment Monitoring Service, European Environment Agency, UNECO-IOC and the United States Environmental Protection Agency, provide data on ocean acidification. On closer examination, all these organizations draw on the same source of data: the measurement data from the Aloha station on Hawaii, provided by the Laboratory for Microbial Oceanography (HOT-DOGS, 2020)25.

This data on yearly average is visualized below. A continued decline in pH is observable. Ocean acidification results from higher CO2 concentration in the atmosphere and minimising ocean acidification requires successful global climate policies.

Figure 18 Average marine acidity (pH) over the period 2011-2016 (source: HOT-DOGS, 2020)



SDG14.3 also points to the need for addressing the impact of ocean acidification. The current indicator does not provide insight into local effects and potential adaptation measures. Initiatives to measure ocean pH on a greater number of locations are underway. The Global Ocean Acidification Observing Network26 is a collaborative international network to detect and understand the drivers of ocean acidification in estuarine-coastal-open ocean environments. This includes data collection through a variety of sources across the globe – such as data collection on biological responses to ocean acidification.

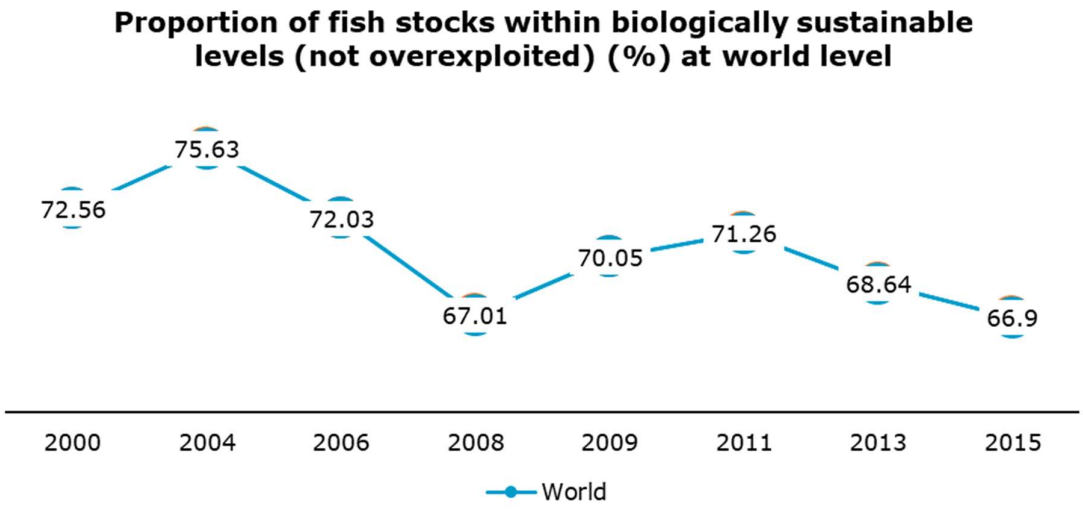
Global climate policies to reduce atmospheric CO2 concentrations are key to halt ocean acidification. Meanwhile, development of knowledge on the effects of acidification, and subsequent formulation of measures to take can reduce the impact of ocean acidification.

SDG14.4

SDG 14.4 focuses on restoring fish stocks. By 2020, the targets consists of effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics. The indicator to measure SDG 14.4 (Index 14.4.1) relates to the proportion of fish stocks within biologically sustainable levels. The detailed metadata for this index is available in UNEP (2019)27.The data for this indicator come from The Food and Agriculture Organization (FAO) and are obtained from UNSTATS (2020)28. Values were produced according to the methodology cited in FAO (2011)29. The indicator measures the sustainability of fishery resources very well and is an end-result measure of Target 14.2. However, its derivation is not only data hungry, but also technically demanding as it needs stock assessment. This is also the reason why there is no data at country level.

Figure 19 shows the proportion of fish stock within biologically sustainable levels (i.e. not overexploited). The proportions are shown over the period 2000-2015. The Figure shows that the proportion of fish stock within biologically sustainable levels was the lowest in 2015.

Figure 19 Proportion of fish stocks within biologically sustainable levels (not overexploited; %) over the period 2000-2015 (source: : UNSTATS, 2020)



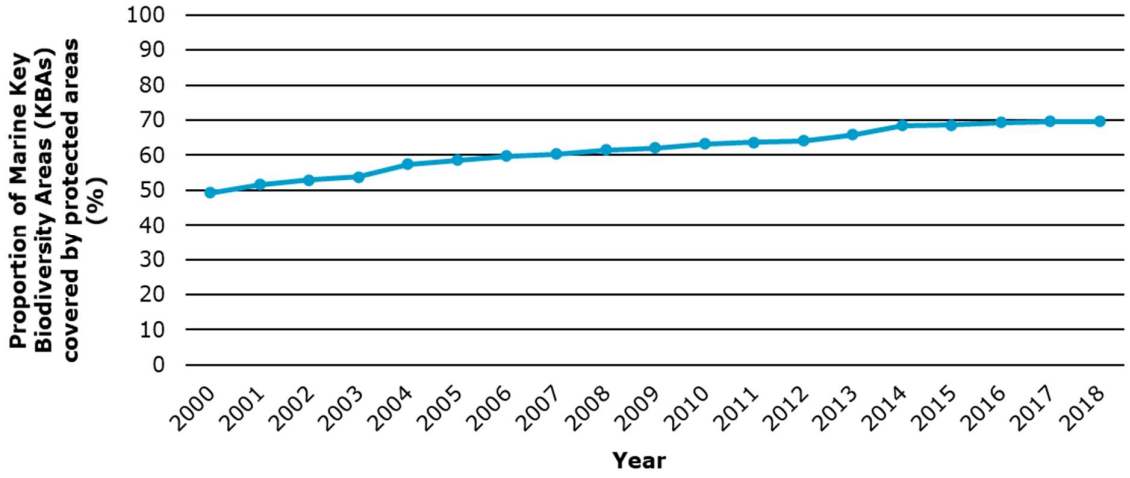
SDG14.5

SDG 14.5 aims to conserve, by 2020, at least 10 percent of coastal and marine areas, consistent with national and international law and based on the best available scientific information (A/RES/71/313). The indicator to measure SDG 14.5 (Index 14.5.1) is the coverage of protected areas in relation to marine areas, which shows the percentage of important sites for marine biodiversity (i.e. those that contribute significantly to the global persistence of biodiversity) that are wholly covered by designed protected areas. The full methodology for this indicator is available in UNEP (2018)30 and the detailed

metadata for this index is available in UNEP (2019)31. Limitations of this index include: i) it does not measure the effectiveness of protected areas in reducing biodiversity loss, ii) there may be difficulties in determining whether a site conforms to the IUCN definition of protected area, and iii) site identification has focused on specific subsets of biodiversity.

Data for this indicator are obtained from UNSTATS (2020)32. Over the period 2000 to 2018, the proportion of Marine Key Biodiversity Areas (KBAs) covered by protected areas in Europe has increased from 49.3% in 2000 to 69.7% in 2018 (see Figure 20) – as compared to 45.7% in 2018 for the world. No specific target for this index has, however, been defined. Rather, SDG 14.5 sets a target for conserving at least 10% of coastal and marine areas – corresponding with the abovementioned proxy for indicator 14.2.1 (i.e. the proportion of protected areas at sea; see 14.2).

Figure 20 Proportion of Marine Key Biodiversity Areas (KBAs) covered by protected areas for Europe over the period 2000-2018 (source: UNSTATS, 2020)



At the EU country level, it can be observed that in 2000 only 2 countries (and Estonia) had less than 10% of their Marine KBAs covered by protected areas, while already 13 countries (57%) had more than 50% of their Marine KBAs covered by protected areas. By 2018, not only, all countries had more than 10% of their Marine KBAs covered by protected areas, but moreover, almost all countries (96%) had more than 50% of their Marine KBAs covered by protected areas[33].

SDG14.6

SDG 14.6 focuses on the prohibition of certain forms of fisheries subsidies. The objective is that by 2020 forms of fisheries subsidies, which only contribute to overcapacity and overfishing, are prohibited. It is very important that subsidies do not contribute to overfishing, and that they subsidise only those activities that are in full compliance with EU and ILO rules on decent working conditions on boards of fishing vessels. Subsidies that contribute to illegal, unreported and unregulated fishing should be eliminated and new such subsidies must not be introduced, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should

be an integral part of the World Trade Organization fisheries subsidies negotiation. The indicator to measure SDG 14.6 (Index 14.6.1) relates to the progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing (A/RES/71/313). The detailed metadata for this index is available in UNEP (2019)[34].

Data for this indicator are obtained from UNSTATS (2020)[35] and this presents the progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing. The degree of implementation is indicated by using the numbers 1 till 5, where 1 corresponds to the lowest level of implementation and 5 to the highest level of implementation. The data corresponds to the year 2018, data on the level of implementation in other years is not available. Hence, no trends over time can be shown and analysed.

All EU Member States show the highest degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing. However, there are also some relatively smaller countries that do not implement any international instruments.

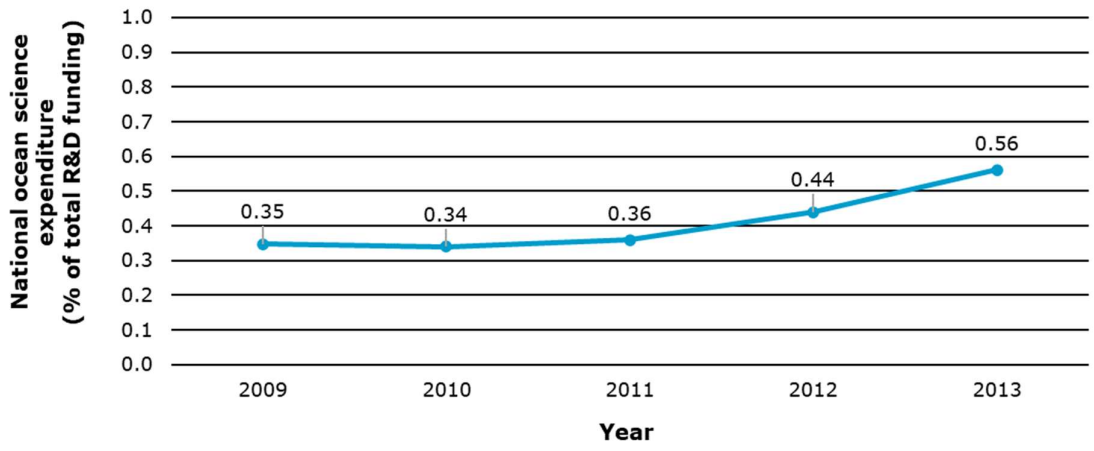
SDG14.7

This target is not further investigated as it is not applicable to the EU Member States.

SDG14.A

SDG 14.A aims to increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries (A/RES/71/313). The indicator to measure SDG 14.a (Index 14.a.1) is the annual national research budget allocated by governments in the field of marine technology, relative to the overall national governmental research and development budget in general. The full methodology and metadata for this index is available in UNEP (2019)[36].

Figure 21 Proportion of total research budget allocated to research in the field of marine technology for Europe over the period 2009-2013 (source: UNSTATS, 2020)



Over the period 2009 to 2013, the marine technology research budget increased from 0.35% (2009) to 0.56% (2013) of the total research budget (see Figure 21). As no specific target is specified, it is not possible to assess how the EU tracks on this indicator. Time series data for only few (5) countries was available and, hence, no break-down by country is presented.

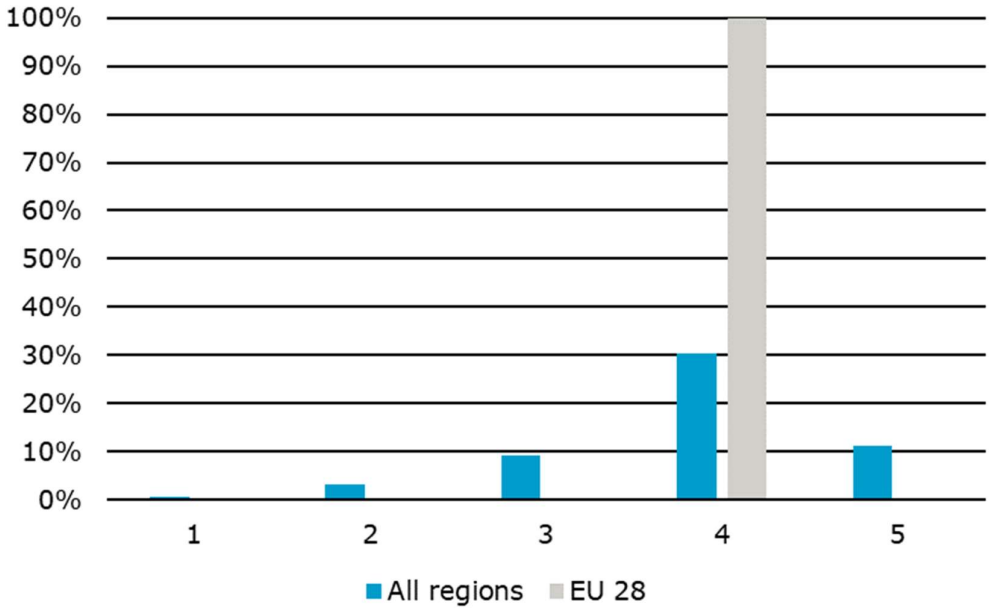
SDG14.B

SDG 14.b aims to "provide access for small-scale artisanal fishers to marine resources and markets" (A/RES/71/313). The indicator to measure SDG 14.b (Index 14.b.1) is the progress by countries in the degree of application of a legal/regulatory/policy/institutional framework that recognizes and protects access rights for small-scale fisheries. The metadata for this index is available in UNEP (2019)[37].

The indicator is a composite indicator calculated on the basis of the efforts being made by countries to implement selected key provisions of the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (SSF Guidelines). This indicator measures the "access rights" aspect of SDG Target 14.b. The assessment is based on three of the five questions on small-scale fisheries introduced in the 2015 version of the Code of Conduct for Responsible Fisheries (CCRF) survey. The survey is circulated by FAO every two years to countries, IGOs and INGOs and the proposed indicator is based on the responses received from FAO Member Countries. The resultant is a score on a 1 to 5 scale (1= lowest, 5= highest), representing the level of implementation of regulations, policies, laws, plans or strategies specifically targeting or addressing small-scale fisheries.

Data for this indicator are obtained from UNSTATS (2020)[38]. The Figure below visualizes the score of EU Member States, compared to non-EU Member States for the year 2018 (data for other years is not available). This overview shows that all EU countries receive a score of 4 out of 5. In the absence of a clearly defined objective, it is not possible to indicate if the achievement of SDG14.b will be achieved.

Figure 22 Degree of application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries (1 = lowest; 5 = highest) in 2018 (source UNSTATS, 2020)

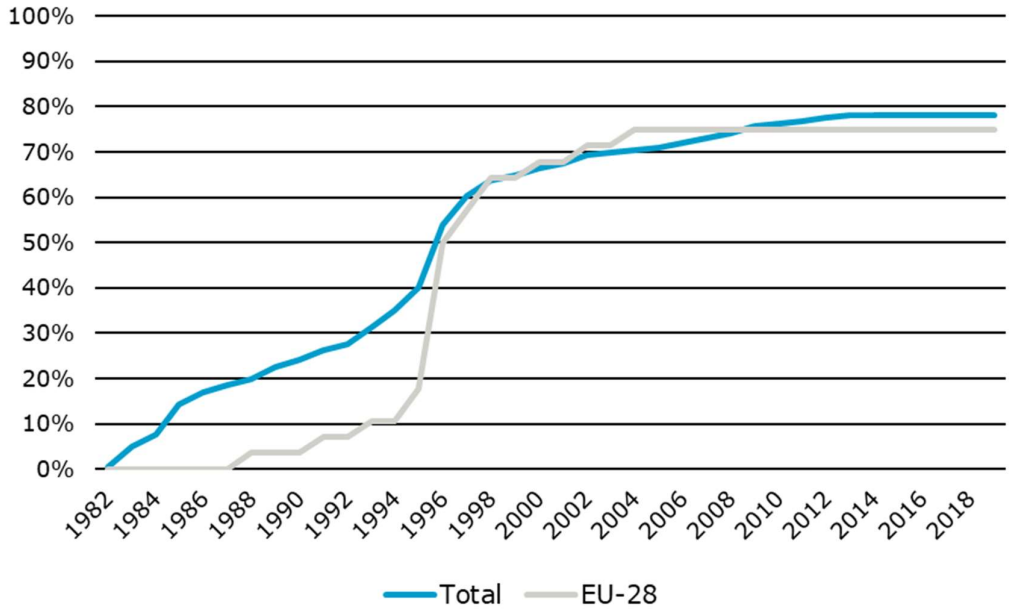


SDG14.C

SDG 14.c aims to enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want[39]. The indicator to measure SDG 14.c (Index 14.c.1) is defined as the number of countries making progress in ratifying, accepting and implementing through legal, policy and institutional frameworks, ocean-related instruments that implement international law, as reflected in UNCLOS, for the conservation and sustainable use of the oceans and their resources. In short, it is defined as the number of countries adapting instruments for Ocean conservation[40]. Data collection for this indicator will start in 2020 and will be repeated every 2-3 years: the metadata for this index is available in UNEP (2019)[41].

Based on data from the United Nations (2020)[42] Figure 23 illustrates the percentage of countries that have ratified UNCLOS since 1982.[43]

Figure 23 Development of percentage of countries who have signed UNCLOS (ratification, succession or accession) over the period 1982-2018 (source: United Nations, 2020)



All EU Member States as well as the EU have ratified UNCLOS which is part of the EU Acquis. This means that all EU Member States have committed to the obligations under UNCLOS, a 100% score on indicator 14.c.1.

Appendix 5: Contextual factors at EU sea basins level

Introduction

This Appendix reports on the analysis for each EU sea basin to identify the relevant ocean-related targets (including SDG14 targets) per sea-basin. It provides a picture of which upstream ocean-related targets are addressed at the level of sea basins, to progress towards SDG14 on an overall level. It is based on a literature review with the most important sources being the corresponding sea basin strategies. An overview of documents analysed is presented in the Table below.

This Appendix explicitly does not attempt to rank and prioritize key issues or make judgemental claims on the performance of concerned authorities in achieving the SDG14 targets.

The sea basin strategies are seen as a contextual factor, with a link to the achievement of the SDG14 targets. The objective of this Appendix is to highlight the links between SDG14 and the reported policy priorities – which are not always explicitly formulated in relation to the Sustainable Development Goals. Thereby, this Appendix contributes to the work done under Task 1 of this study.

The table below provides an overview of the documents studied in preparing this Appendix:

Sea-basin	Document
Baltic basin	European Commission (2009), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions concerning the European Union Strategy for the Baltic Sea Region, COM(2009) 248 final, Brussels European Commission (2014), A Sustainable Blue Growth Agenda for the Baltic Sea Region, Commission Staff Working Document, SWD(2014) 167 final, Brussels
Atlantic Ocean Area	European Commission (2011), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Developing a Maritime Strategy for the Atlantic Ocean Area, COM(2011) 782 final, Brussels European Commission (2018), the mid-term review of the Atlantic action plan, Commission Staff Working Document, SWD(2018) 49 final, Brussels
Mediterranean basin	European Commission (2009), Communication from the Commission to the Council and the European Parliament: Towards an Integrated Maritime Policy for better governance in the Mediterranean, COM(2009) 466 final, Brussels

Sea-basin	Document
	European Commission (2011), Commission Staff Working Document: Framework for Action, accompanying document Communication from the Commission to the European Parliament, the Council, the Committee of Regions and the European Economic and Social Committee: Initiative for the sustainable development of the blue economy in the western Mediterranean, SWD(2017) 130 final, Brussels
Black sea basin	European Commission (2015), Black Sea Synergy: review of a regional cooperation initiative, Joint Staff Working Document, SWD(2015) 6 final, Brussels Ministerial Declaration (2018), Towards a common maritime agenda for the Black Sea, Burgas Declaration
North sea basin	Regional Economic & Innovation Dynamics Consulting SPRL (2016), Strategic Cooperation on Blue Growth in the North Sea, Workshop background paper, The Hague Regional Economic & Innovation Dynamics Consulting SPRL (2016), Strategic Cooperation on Blue Growth in the North Sea, Workshop report, The Hague Study on Blue Growth and Maritime Policy within the EU North Sea Region and the English Channel (FWC Mare: 2012:06 – SC E1/2012/01), Ecorys, March 2014
Adriatic and Ionian sea basin	European Commission (2014), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions concerning the European Union Strategy for the Adriatic and Ionian Region, COM(2014) 357 final, Brussels
Artic basin	European Commission (2012), Joint Staff Working Document: the inventory of activities in the framework of developing a European Union Arctic Policy, accompanying document Joint Communication to the European Parliament and the Council: Developing a European Union Policy towards the Arctic Region progress since 2008 and next steps, SWD(2012) 182 final, Brussels European Commission (2016), Joint Communication to the European Parliament and the Council: an integrated European Union policy for the Arctic, JOIN(2016) 21 final, Brussels
Outermost regions	European Commission (2017), Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank: a stronger and renewed strategic partnership with the EU's outermost regions, COM(2017) 623 final, Strasbourg

Sea-basin	Document
	European Commission (2017), Annex: comprehensive list of actions, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank: a stronger and renewed strategic partnership with the EU's outermost regions, Annex to COM(2017) 623 final, Strasbourg

After studying the abovementioned documents, the study team consulted the Regional Sea Conventions to provide feedback on the analysis. The following additional documents were suggested by the Regional Sea Conventions as relevant to provide more information on the contextual factors at the sea basin level[xliv]:

Sea-basin	Document
Atlantic Ocean Area	A new approach to the Atlantic maritime strategy – Atlantic action plan 2.0. An updated action plan for a sustainable, resilient and competitive blue economy in the European Union Atlantic area COM, (2020) 329 final
Black sea basin	2018 Sofia Declaration on Black Sea fisheries and aquaculture Black Sea Synergy: review of a regional cooperation initiative - period 2015-2018, Joint Staff Working Document, SWD (2019) 100 final, Brussels 2019 Ministerial declaration on the Common Maritime Agenda for the Black Sea

Baltic basin

- The Baltic Sea is the youngest sea on the planet, almost enclosed, experiencing near-arctic conditions and being one of the world's largest brackish waters. It supports unique ecosystems, faces very specific eutrophication challenges and is particularly vulnerable to algal blooms and hazardous substances.
- Compared to other EU regions, the Baltic region enjoys low unemployment, higher growth rates and lower government debt ratios. It benefits from strong research and innovation activities and a tradition of close cooperation. It is one of the relatively busier seas in the world for shipping, especially oil transport, as well as for coastal tourism and offshore wind projects.
- The key policy priorities relevant to SDG14 identified for the Baltic basin from the sustainable blue growth agenda SWD(2014) 167 and EU communication COM(2009) 248 are as follows:
- 14.1: the reduction of land-based pollution and accidental marine pollution is aimed for in the Baltic basin. Pollution by nutrients, predominantly nitrates and phosphates, cannot easily be absorbed but have rapid and visible impacts such as algae blooms covering more of the sea each summer. Accidental or deliberate marine pollution is a risk area due to the strategic position of the Baltic Sea region, as it is a natural route for transport and liquefied natural gas
- 14.4: further development of the Baltic fisheries sector depends on effective implementation of the Common Fisheries Policy (CFP), in particular to ensure the exploitation of all fisheries resources at levels of maximum sustainable yield (MSY) and effectively eradicating discards
- 14.A: transfer of scientific knowledge and competence is a priority area for the Baltic Sea, top innovation performers like Germany and the Nordic countries can greatly help Poland and the Baltic states to continue catching up. This is supported by the EU Research Framework Programme

- 2.4: long-term sustainable food production is mentioned as an area of focus for the Baltic region as fisheries and aquaculture depend on healthy environment and water quality. Aquaculture remains relatively limited and is predominantly focused on freshwater species in the Baltic sea region and is seen as a sector for potential growth. In 2013 in Copenhagen, the Baltic Sea region countries confirmed their commitment the sustainable growth[xlv]
- 6.3: improving water quality, especially to support fisheries, aquaculture and tourism has been highlighted as a priority for the region
- 8.1: sustainable economic growth is high on the agenda for the Baltic Sea region, both traditional and emerging sectors (e.g. shipbuilding, fishing, maritime transport, blue biotechnology, coastal tourism, renewable energy and oil and gas installations). The key avenues for sustainable blue growth highlighted are innovation, improving skills and qualifications and access to finance
- 8.3: development-oriented policies could be seen in the focus on innovation, especially in biotechnology, maritime technology, and supporting other priority areas including energy, SMEs, skills and cluster development, and tourism
- 8.9: sustainable tourism is targeted under blue growth strategies (see SDG8.1 and 8.3). The scope of the tourism priority area could also be widened to address issues of seasonality, cruise destinations for smaller vessels or networks of yachting and marinas
- 12.2: efficient use of natural resources is incorporated through effective implementation of the CFP, ensuring fisheries resources are at levels consistent with MSY, and energy efficiency is considered through objectives related to clean shipping (emissions reduction) and innovation
- 13.1: adaptation to climate change is a growing challenge for the Baltic Sea region, especially because of the expected increase in extreme weather

Atlantic Ocean area

The Atlantic area supports a dynamic blue economy generating gross value added of about EUR 27 billion and over 800.000 jobs.[xlvi] Maritime industries represent a significant part of the economy in regions such as Brittany, Galicia and Cornwall, but the profile of local economies remains very diverse.

The key policy objectives relevant to SDG14 identified for the Atlantic Ocean area based on EU Communication for developing a Maritime Strategy for the Atlantic Ocean Area and the midterm review of the action plan are as follows:

- 14.1: reduction of pollution from farming and industrial activity, as well as marine litter, as this poses problems for marine birds and mammals in the Atlantic marine environment
- 14.2: ecosystem management is at the forefront of the maritime strategy for the Atlantic Ocean area and is the basis for marine management in both the Marine Strategy Framework Directive and the CFP. The SponGES project[xlvii], supported under H2020 with the United States and Canada, is developing an integrated

ecosystem-based approach to preserve and sustainably use vulnerable sponge ecosystems in the North Atlantic

- 14.4: illegal, unreported and unregulated fishing is a topic of concern for the Atlantic Ocean area. Atlantic regions will therefore benefit from ongoing EU-level measures to promote the development of Common Information Sharing Environment (CISE)
- 14.5: the designation and management of marine protected areas are an issue of relevance to the Atlantic Ocean, and one of the aims of the Atlantic action plan is to support OSPAR (Convention for the Protection of the Marine Environment of the North-East Atlantic) processes in order to develop a coherent network of marine protected areas around Europe's Atlantic coast, and calls for action and cooperation through OSPAR to restore ecosystem
- 14.A: enabling smart blue growth through knowledge sharing, innovation and enhancing competitiveness is listed as priority 1 under the action plan for the Atlantic Ocean area. Projects like The Ocean Platform of the Canary Islands (PLOCAN)[xlviii] focus on creating conditions for economic development and supports to national research and technological capacities in the Canary Islands.
- 2.4: sustainable food production from fisheries and aquaculture in the Atlantic is both an area of challenge and opportunity for the Atlantic
- 8.1: socially inclusive and sustainable growth is highlighted as a goal in developing a maritime strategy for the Atlantic. In particular, sustainable growth opportunities for local communities that compensate for the relative decline of traditional maritime industries
- 8.3: development-oriented policies are primarily geared towards renewable energy (France), novel marine products and biotechnology applications (Portugal), high valued products for SMEs (Ireland), connectivity and port (Spain and Ireland), regional development and tourism infrastructure (Wales). A lot of the focus is on improving the framework conditions for innovation and entrepreneurship
- 8.4: for resource efficiency, the key emphasis is placed on energy for the Atlantic Ocean area, adopting the Energy Efficiency Index for ships as well as favouring more fuel-efficient ships to target reducing emissions. In addition, a significant level of resources supporting environmental protection and resource efficiency has been committed under the European Regional Developed Fund (ERDF) and the Cohesion Fund
- 8.9: sustainable tourism strategies are in line with socially inclusive growth goals for coastal communities (see SDG8.1), mostly focused on strategic regional tourism infrastructure developments to improve the quality of tourism destinations (e.g. Wales, see SDG8.3)
- 11.3: sustainable urban development goals are also in line with socially inclusive growth objectives, to bring about a lasting improvement in a city's economic, physical, social and environmental conditions; and tackling demographic challenges and providing public services in remote areas
- 11.4: strengthening cultural heritage preservation falls under socially inclusive growth objectives

- 11.6: reducing environmental impact from human activities is a focal area under the 'a cleaner and more predictable Atlantic' priority (no.2 action plan)[xlix], e.g. reducing emissions from cruise liners
- 12.2: sustainable and efficient use of natural resources, both fisheries and exploration of resources on sea floor, are considered under enabling smart growth priority (no.1 action plan)xlix
- 13.1: climate change adaption is a key priority of the Maritime Strategy for the Atlantic Ocean area, most projects aim at improving the understanding of vulnerabilities to ecosystems in the face of climate change (e.g. ATLAS[l], Bluefish[li])

Western Mediterranean basin

The key policy objectives relevant to SDG14 identified for the Mediterranean Sea basin based on COM(2009) 466 and SWD(2017) 130 are as follows:

- 14.1: fight against / reduction of pollution from land sources and ships, as well as (marine) litter. The Mediterranean Sea has been classified, under MARPOL, as 'special areas' for oil spills? since 1983 and for garbage since May 2009. For action items, see SDG6.3 below. The Regional Plan on Marine Litter Management in the Mediterranean was adopted by the Contracting Parties of the Mediterranean Action Plan in 2013, providing for legally binding measures and timelines for prevention and reduction of marine litter from land and sea based sources.
- 14.2: The ecosystem approach is an overarching principle in UNEP/MAP system. The Ecosystem Approach Roadmap was adopted by the Parties in 2008. A region-wide Integrated Monitoring and Assessment Programme (IMAP) was adopted in 2016 and is under implementation. Suggested action items under goal no. 2[lii], smart and resilient blue economy, include new theme-based tourism services such as protecting and restoring ecosystems on islands (beaches and dunes) as well as building eco-friendly artificial reefs[liii]. The General Fisheries Commission for the Mediterranean (GFCM) adopted binding recommendations aiming at protecting by-catch species and sensitive and vulnerable species such as sea turtles, sharks and rays, marine birds; vulnerable marine ecosystems (VMEs). It is also working on developing fisheries selectivity in the Mediterranean and the Black Sea. The EU is aiming at the same goals through targeted regulations and the Communication to the European Parliament and the Council on a European Green Deal.[liv]
- 14.4: overfishing and Illegal, Unreported and Unregulated (IUU) fishing are highlighted as a key challenge for the Mediterranean, especially given the extent of high seas areas and large number of coastal states. Efforts are made to coordinate coastguard activities to mitigate IUU fishing. The GFCM adopted binding recommendations on using Vessel Monitoring System (VMS) and Electronic recording reporting system (ERS) to fight IUU fishing. In 2019 it reinforced the powers of its Compliance Committee (CoC). The EU, on its part, adopted in 2008 Council Regulation (EC) No 1005/2008, a specific IUU regulation.[lv] Under the CFP, stocks managed at EU level should be fished at sustainable levels (MSY) by 2020 at the latest.

- 14.5: In the Mediterranean, the UNEP/MAP – Barcelona Convention system has bolstered regional and national efforts in the conservation and protection of marine and coastal species and habitats in line with the Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol) and the Strategic Action Programme for the Conservation of the Biological Diversity in the Mediterranean Region (SAP BIO). Nationally designated marine protected areas, including Natura 2000 sites under the EU Birds and Habitats Directives,[lvi] and Specially Protected Areas of Mediterranean Importance (SAMI) sites, designated under the Barcelona Convention, cover together about 19.6% of total sea area (2016) as reported by the European Environment Agency[lvii].
- 14.A: The UNEP/MAP - Barcelona Convention system supports the strengthening of the Science-Policy Interface in the Mediterranean region. Exchanging scientific knowledge and technological know-how in the field of sustainable blue growth for the benefit of WestMED countries is highlighted as a skills development and circulation goal under goal no. 2[lviii], smart and resilient blue economy, for the sustainable development initiative in the western Mediterranean. Further cooperation for the collection of basic data with Mediterranean non-EU countries, through joint programmes and capacity-building is also a key action item for facilitating knowledge-based action under the Integrated Maritime Policyliii.
- 14.C: Given that not all Mediterranean coastal states are Parties to UNCLOS, namely Turkey, Syria, Israel, and Libya, there is opportunity to provide support to these states in meeting target 14.C: enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS
- 6.3: development of innovative solar powered seawater desalination facilities for clean water provision is an action item for sustainable consumption and production under goal no. 2lix, a smart resilient blue economy. Similarly identifying and measuring chemical compounds and other pollutants in water are another action itemliii
- 8.1: sustainable economic growth is targeted under goal no. 2lx, smart resilient blue economy, for WestMEDliii. The focus is on blue technologies, maritime transport, sustainable tourism and aquaculture. At their 21st Meeting held on 2-5 December 2019, the Contracting Parties to the Barcelona Convention "consider[ed] that the resources of the Mediterranean should trigger economic prosperity and contribute to the stability of the region with green jobs and innovation opportunities for the maritime economy sectors (aquaculture, fisheries, tourism, shipping, ports) and for emerging ones (blue biotechnologies, marine renewable sources, services digitalization), in full respect of the environmental protection, in a circular approach and good governance pattern, supported by the implementation of the Mediterranean Strategy for Sustainable Development 2016-2025". A Regional Action Plan on Sustainable Consumption and Production in the Mediterranean was adopted by the Contracting Parties to the Barcelona Convention in 2016. Countries are developing and implementing Sustainable Consumption and Production National Action Plans with support from UNEP/MAP.
- 8.4: promoting resource efficiency, especially in energy use and green energy in ports and by vessels, is considered an area of action for the WestMED under sustainable consumption and production goals

- 8.9: sustainable tourism is an important area of interest for the WestMED (see SDG8.1), but tourism requires greater innovation and diversification to remain sustainable (see SDG14.2). Cruise tourism is increasing rapidly in major Mediterranean ports (more than 1 million tourists arriving via cruise p.a.). The 2017 report "Sustainable tourism in the Mediterranean: State of Play and Strategic Directions" builds on the recent regional and international literature on tourism and sustainability to shape guidelines and recommendations for sustainable tourism in the Mediterranean. Ultimately, these guidelines could be endorsed by regional stakeholders, such as the Mediterranean Commission on Sustainable Development (MCSD) and the Parties of the Barcelona Convention[lxi],
- 11.4: protection of coastlines of the Mediterranean is an objective, including protecting its unique cultural and natural heritage of over 400 UNESCO sites. There is also an emphasis on protecting and promoting sustainable cultural tourism
- 11.6: the environmental impact from ever-growing human and economic development has come from mostly land-based pollution (see SDG14.1). Action item for WestMED under goal no.3lxii, better governance, include developing common tools to assess the impacts of human activities for better spatial planning and coastal managementliii
- 12.1: sustainable consumption by WestMED focuses on supporting the use of clean energy sources (solar and wind) for seawater desalination and build capacity across the region; promote energy efficiency and adaptation to climate change in coastal cities
- 12.2: efficient use of natural resources tied in with renewable energy and seawater desalination (see SDG12.2)
- 12.4: chemical pollution is a key issue for the Mediterranean (see SDG14.1 and 6.3). On average, there are about 60 maritime transport accidents per year in the western Mediterranean, 15 of which involve tankers transporting oil or chemicals[lxiii]
- 12.5: reducing waste generation is a priority under sustainable consumption goals by WestMED, in particular reducing waste and promoting recycling ships and fishing vessels
- 12.6: sustainable practices, especially waste management and recycling, for the private sector is encouraged through the Port Reception Facility Directive for the WestMED sustainable development initiative
- 13.1: the Mediterranean region is identified by the Intergovernmental Panel on Climate Change as a "hot spot" and is most at risk from flooding, coastal erosion and further land degradation. Strengthening resilience and adaptive capacity to climate change is targeted through goals related to strategic research and innovation in the WestMED, assessing the impact of climate change on ecosystems and resource production. Integrated Coastal Zone Management is implemented through the Regional Climate Change Adaptation Framework for the Mediterranean Marine and Coastal Areas, adopted by Contracting Parties to the Barcelona Convention , in 2016.[lxiv]

Black Sea basin

The Black Sea is highly sensitive to anthropogenic impacts due to the huge catchment area and its almost landlocked nature. A large part of the sea water is naturally anoxic meaning that marine life is absent at depths beyond 150–200m, with the exception of a few anaerobic bacteria.

The 2018 Sofia Ministerial Declaration on Black Sea fisheries and aquaculture signed up by the EU, EU Member States and third countries, established a new fisheries governance in the Black Sea and a concrete 10-year roadmap of joint actions. These actions are related to enhancing data collection and scientific evaluation, establishing an ecosystem-based fisheries management, developing a culture of compliance and eliminate IUU fishing, supporting sustainable small-scale fisheries and aquaculture, and enhancing solidarity and coordination in the Black Sea. The Sofia Ministerial Declaration is based on the GFCM mid-term strategy (2017-2020) towards the sustainability of Mediterranean and Black Sea Fisheries, which adapts the SDG 14 targets and the Aichi Biodiversity Targets to the specificities of the Black Sea region. The BlackSea4Fish project[lxv] established by the Sofia Ministerial Declaration addresses key challenges on fisheries, such as the need to improve the scientific knowledge, data collection performing surveys at sea and the scientific advice for sound management measures, climatic and pollution effects to fisheries, bycatches and sensitive species, quantification of IUU fishinglxvi. The project provides an exemplary platform for scientific cooperation among all Black Sea scientists/experts.

The 2018 Burgas Ministerial Declaration highlighted a number of areas for voluntary cooperation including sustainable maritime and coastal tourism taking into account of cultural and environmental assets of the region; marine science, research, innovation and education; blue growth promotion, improved marine environmental protection including challenges such as plastic marine litter; and maritime and environmental investment, observation and monitoring.

The key policy objectives relevant to SDG14 identified for the Black sea basin from the Black Sea Synergy staff working document (2015) are as follows:

- 14.1: reduce pollution pressures from excess nutrients, organic compounds such as pesticide run offs, as well as other pollutants including heavy metals, incidental and operational spills from oil vessels
- 14.2: reduce threats to biodiversity and ecosystems from pollution and invasion of exotic species. The BlackSea4Fish project runs a first-ever regional research plan for *Rapa whelk,* an invasive species that has high commercial value and ranks among stocks with high volume of catches in the Black Sea.
- 14.3: Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels. The BlackSea4Fish project is tasked to assess climatic effects to fisheries and possible mitigation measures.14.4: tackle overfishing and establish a regional fishing capacity plan, developing a culture of compliance and eliminating IUU fishing are key challenges for the Black Sea and key objectives of the Sofia Ministerial Declaration. The 10-year roadmap of joint actions reflects the political commitments undertaken towards fisheries sustainability. The effective implementation of the Declaration will result in greater integration. The turbot international joint control and inspection pilot project under the coordination of the European Fisheries Control Agency (EFCA) has contributed in the fight against

IUU fishing and further to that the development of a regional Catch Certification Scheme for turbot catches.

- 14.A: The BlackSea4Fish project is a key pillar at regional level to advance on science, research and data collection on Black Sea fisheries with the strong engagement and participation of scientists and experts from all Black Sea countries. This exemplary regional project kicked off the scientific cooperation in fisheries, improved scientific knowledge, promoted sharing knowledge, improved data collection and data gaps, performed surveys at sea, fine-tuned stock assessments and implemented regional research plans. Scientific knowledge and data sharing is an area of focus for the Black Sea with over 20 organisations in littoral states working together to make their marine data more accessible, interoperable and useful to end-users under the framework of the European Marine Observation and Data Network (EMODNet).
- 6.3: water quality is highlighted as an important area for the Black Sea as a result of pollution from heavy metals and oil spills. Two environmental monitoring projects aiming to strengthen capacities for biological and chemical monitoring of Black Sea water quality and covering together all coastal states have been launched since 2012. The Environmental Monitoring in the Black Sea region (EMBLAS)[lxvii] project will allow Ukraine, Georgia and Russia to perform environmental monitoring at sea following uniform standards and in line with the requirements of the EU Marine Strategy Framework Directive (MSFD) and the needs of the Black Sea Strategic Action Plan[lxviii]
- 8.1: sustainable economic growth is a factor considered under the EU Integrated Maritime Policy (IMP), with the Blue Growth Communication affirming the role of the seas as a common resource and potential avenue for new quality jobs and growth
- 8.3: IMP aims to enable better coordination and coherence between sectors related to the sea to support sustainable development-oriented policies. In the area of transport, the EU has supported technical assistance with a total of almost EUR 186 million up till 2014, for more than 80 projects in the areas of infrastructure development, safety and security in transport as well as trade facilitation and logistics. The EU is also supporting energy infrastructure development and modernisation in the Black Sea region (e.g. the Black Sea Regional Transmission Network project and the Romania-Republic of Moldova gas interconnector)
- 8.4: resource efficiency is targeted under fisheries (e.g. reducing overfishing) as well as energy. Azerbaijan and Russia are two important actors, both in the gas and in the oil sector. The Black Sea region was also highlighted for its potential to develop production of energy from renewable sources, including hydro, solar and wind power
- 8.5: for employment and decent work, the Black Sea region faces a number of challenges including unemployment, a large informal economy, and issues related to a positive working environment, such as social dialogue, social protection and gender equality. Issues relating to social exclusion and the fight against poverty are also relevant across the region. Reduced marine pollution, improved resilience of marine ecosystems and sustainably managed fisheries targeted under SDG 14 can all help to improve employment prospects in the region, including providing employment opportunities to youth and women in related processing sectors

- 8.9: sustainable tourism is explored through a number of regional cooperation initiatives (e.g. Silk Road Corridor, Limen Project, and Network for Sustainable Tourism Development)
- 11.3: sustainable urbanisation and management of citizens' mobility is an important issue for the Black Sea region.
- 11.4: cultural and natural heritage are encouraged through initiatives like the Limen Project (see SDG8.9), which aims to contribute to development of cultural tourism in the wider Black Sea region through the establishment of the "Cultural Port of the Black Sea"
- 11.6: environmental impact of cities and human activities on climate change is an area of focus for the Black Sea region and is targeted through one of 20 projects that the EU contribute to, the PERSEUS projectlxviii
- 12.2 sustainable management and efficient use of resources (see SDG14.4 and SDG8.4)
- 12.4: chemical pollution from oil spills and fertilisers (see SDG14.1)
- 13.3: capacity in climate change adaption is targeted through projects such as PERSEUS, which looks at impact of climate change on human activities in the Black Sea region. Launched in March 2010 at a Ministerial level conference in Brussels, the Environment Partnership under the Black Sea Synergy produced concrete projects on environmental protection and climate change adaptation, strengthening the environmental governance in the regionlxviii

North Sea basin

The North Sea's maritime (blue) economy is estimated to represent at least €150 billion (or approximately 30% of the EU total) and employ at least 850,000 people. The 2014 North-Sea Blue Growth report suggested that the following key sectors were the most relevant and had the highest future development potential in the North Sea: offshore wind offshore oil & gas, aquaculture, deep-sea shipping, shipbuilding, cruise tourism and coastal protectionlxix. The conclusion was that "development and adaptation of innovative, sustainable cross-sectoral approaches, procedures and infrastructures will be one of the main drivers in the region".

The key policy objectives relevant to SDG14 identified for the North Sea basin from workshop documents related to Strategic Cooperation on Blue Growth in the North Sea are as follows:

- 14.1: reducing air pollution through cleaner shipping is identified as an important area under the regional Smart Specialisation strategy. Marine litter, especially those from fishing and aquaculture, is also an area of focus
- 14.2: protecting and restoring productivity of ecosystems
- 14.5: as part of restoring productivity of ecosystems, marine protected areas are established in the North Sea basin
- 14.A: building and sharing scientific knowledge, developing "knowledge pools", is an important area of focus for all North Sea countries – Flemish Smart Specialisation

strategy (Belgium), Offshore Centre Denmark, Bremen Smart specialisation strategy (Germany), Campus de la Mer (France), Top Sector Alliance for Knowledge and Innovation (Netherlands) etc.

- 2.4: sustainable food production, in particular aquaculture, is a key priority for countries like Scotland, France and Norway. EU Member States have developed Multiannual National Strategic Plans for the promotion of sustainable aquaculture
- 6.5: the primary focus for the North Sea basin in terms of water management and cooperation is around water transport and logistics (e.g. European Blue Belt Project, safe and clean shipping, 'partners for water'). Better water management in these areas are expected to positively impact SDG 14 targets, especially regarding pollution from shipping. Secondary focus for the region in improving water management is on water technologies and dike monitoring
- 8.1: sustainable long-term economic growth in the marine sectors is a major area for cooperation for the Member States in the North Sea region. Blue growth sectors with the strongest government focus and concentrations of expertise in the region are identified as follows: oil and gas (Norway and Scotland), offshore wind (Denmark and Netherlands) and maritime transport (Netherlands, Germany, Denmark, Sweden and Norway)
- 8.3: development-oriented policies for blue growth are targeted through cluster mapping across business-academic-public sectors, including cluster link ups, collaborative R&D, joint development of markets etc. Support for innovation are often done through private-public-partnerships, but there is still a need to reduce bureaucracy and find easier ways to combine funding for, especially SMEs
- 11.6: bridging the tension between the marine environmental and pressures of human activities (Land Sea Interactions) are a focal issue in Maritime Spatial Planning and recurrent in e.g. the Dutch North Sea Spatial Agenda 2050
- 12.1 securing sustainable consumption of marine food supply, harvest marine energy, etc. is an important objective for the North Sea, in particular sustainable consumption of aquaculture production (incl. re-use of waste materials such as shells) as well as sustainable use of marine biomass and renewable energy
- 12.2 building cross-sectoral cooperation across the sea-basin to ensure sustainable use of resources and to stimulate the development of offshore renewable energy production is at the forefront of priorities for the North Sea
- 12.5: reducing waste generation is targeted through specialising industrial value chains for recycling (Belgium) and re-using waste materials in aquaculture such as shells (France), and other marine litter initiatives (Netherlands)
- 13.1: strengthening resilience and adaptive capacity to climate change is incorporated through improving technologies and innovation in coastal protection for low-lying countries
- 13.2: combatting climate change via implementation of the UNFCCC COP 21 Paris agreement

Adriatic and Ionian Sea basin

The Region is located at major European cross-roads. The Adriatic-Ionian Sea basin is a natural waterway penetrating deep into the EU. The key policy objectives relevant to SDG14 identified for the Adriatic and Ionian Sea basin based on EU communications concerning the EU strategy for the region are as follows:

- 14.1: the shallowness and its semi-enclosed nature make the Adriatic Sea vulnerable to pollution. Sources can include untreated wastewater and solid waste from land-based sources, fertiliser run-off from agricultural activities and pollution from oil and gas exploration
- 14.2: Implementation of the Marine Strategy Framework Directive, Maritime Spatial Planning/Integrated Coastal Management and the CFP are designed to reduce these pressures resulting from intensifying human use of the coast and sea.
- 14.4: overfishing is a challenge for the region, and threatens the marine biodiversity
- 14.5: improving trans-border, open-water networks of marine protected areas is a priority for the region in combatting threats to coastal and marine biodiversity. This falls under the Marine Strategy Framework Directive – 10% surface coverage by 2020 of the Adriatic and Ionian Seas by Marine Protected areas, in line with international commitments
- 14.A: improving scientific knowledge, research and innovation, and facilitating knowledge transfer related to blue technologies are linked to regional and national smart specialisation strategies
- 2.4: sustainable food production systems through the development of blue technologies is an area of opportunity for the region
- 6.3: improving water quality falls under the third pillar of the Adriatic and Ionian Sea action plan, environmental quality. It looks at improving environmental status of marine and coastal ecosystems by reducing pollution of the sea
- 8.1: promoting sustainable economic prosperity through growth and job creation is the key objective of the strategy for the region. There are stark disparities both in terms of GDP per capita and unemployment rates between the countries in the region, which marks an important challenge for inclusive growth
- 8.3: development policies for interconnection of electricity grids are needed to reduce hinderance on profitable exploitation of renewable energy sources. Similarly, interlinked and sustainable transport networks in the region will help relieve bottlenecks and increase competitiveness
- 8.5: Socially inclusive growth in employment marks a challenge for the region
- 8.9: sustainable tourism is a key priority area for the Adriatic-Ionian Sea region, the fourth pillar of the action plan. Tourism is fast-growing and a main GDP contributor. Improving the quality and diversification of tourism products and services, along with tackling seasonality, will boost business and create jobs
- 12.1: sustainable fisheries and aquaculture production is targeted under blue growth objectives. This involves implementing multiannual fisheries management plans at sea basin level, harmonising standards, improving skills and capacity to comply with EU rules and standards and increasing the added value of local seafood value chains, notably through special research and innovation platforms, joint development of market intelligence and more transparent marketing and processing

- 12.2: sustainable management of natural resources is mentioned in relation to sustainable fisheries management (see SDG12.1)
- 13.1: the region is exposed and vulnerable to the adverse impacts of climate change. Lack of common risk assessment, disaster risk management and integrated mitigation and adaptation strategies is a major challenge. With uneven levels of experience, resources and know-how, countries cannot cope on their own with rising sea levels, flooding, drought, soil erosion and forest fires.
- 13.2: while the European Union Strategy for the Adriatic and Ionian Region does not prescribe integration of climate change measures into national policies, strategies or planning, the strategy does aim to strengthen EU policies relevant to the Region and linked to relevant EU programmes, including the EU Adaptation to Climate Change strategy

Arctic region

A safe, stable, sustainable and prosperous Arctic is crucial not just for the region itself, but for the EU and for the rest of the world. The wider Arctic region plays a vital role of regulating climate. Important and sensitive marine and terrestrial ecosystems are located in the Arctic region, and the region is breeding ground for various migratory species[lxx]. More than half of the world's wetlands are in the Arctic and sub-Arctic region. It is also rich in natural resources such as fish, minerals, oil and gas. Eight states have territories in the Arctic: Canada, Denmark (acting on behalf of Greenland and the Faroe Islands), Finland, Iceland, Norway, Russia, Sweden and the United States. Three EU Member States are therefore also Arctic states, while Iceland and Norway are members of the European Economic Area. While the Arctic States have primary responsibility for tackling issues within their territories, many of the issues affecting the region can only be effectively addressed through regional or multilateral cooperation.

The key policy objectives relevant to SDG14 based on the 2016 Joint Communication for an integrated EU policy for the Artic region are as follows:

- 14.1: long-range pollution is an area of concern for the Artic region, with Arctic inhabitants suffering from high levels of pollutants and heavy metals that end up in the Arctic's food web. The EC is committed to working closely with Member States, the OSPAR Convention and other stakeholders on oil and gas activities to promote the adoption of the highest standards of major accident prevention and environmental control. It welcomes the Arctic Council Agreement on Cooperation on Marine Oil Pollution, Preparedness and Response in the Arctic. EU legislation calls on our Member States to ensure that in their waters marine litter does not harm the coastal and marine environment. Therefore preventing at source the pollution that could end up in the Arctic Ocean and other European seas is a vital aim of the legislation. The Commission Strategy for Plastics, with its flagship initiatives against single-use plastics, micro-plastics from all sources and its strong international dimension, illustrates the intensification of EU efforts against marine litter, in the Arctic as well.
- 14.2: delicate Arctic ecosystems are under threat from climate change and the EU has a duty to protect the Arctic environment and strengthen ecosystem resilience.

- 14.5: marine protected areas are important to establish for the preservation of biodiversity
- 14.A: increasing scientific knowledge, and building close links between research, science and technology while taking into account of traditional knowledge is high on the agenda for the Arctic region. The EU funds a number of projects to improve technologies for monitoring and provide better understanding of the region
- 14.C: given the transboundary nature of the Arctic region, promoting the full respect of UNCLOS, including the obligation to protect and preserve the marine environment, is critical. This is especially important for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction
- 2.4: the wider Arctic region is rich in natural resources such as fish, minerals, oil and gas. Sustainable low-emission food production marks an area of opportunity that could be developed further
- 6.3: improving water quality is tied in with reducing pollution (see SDG14.1)
- 8.1: Regional 'smart specialisation strategies', combined with EU funding, can help to develop local models of sustainable growth and job creation in the European Arctic with potential benefits across the EU. With wide variations across this vast region, energy is expected to be a growth sector, and may include on-and off-shore wind power, ocean energy, geothermal energy and hydropower
- 8.2: the Commission has committed to funding and facilitating an annual Arctic stakeholders forum in the European Arctic region to strengthen collaboration and networking between stakeholders to improve capacity building, international project development and awareness of financing sources.
- 8.4: promoting sustainable and efficient use of resources is in line with ambitious energy and climate objectives adopted by the EC in 2007. Cooperation with Arctic countries regarding energy efficiency and the promotion the development of renewable sources of energy in the Arctic region is a major area of opportunity
- 8.9: eco-tourism and maritime tourism are opportunities for sustainable economic activities in the region
- 11.4: ensuring respect and promotion of cultural and natural heritage in EU's engagement and policies affecting the Arctic is an important priority for the EU in the region; In addition to the annual Stakeholders forum, the Commission organises the Indigenous Peoples Dialogue.
- 12.2: it is important to ensure that appropriate measures are in place for effective stewardship (i.e. leadership in preservation and caretaking) of the Arctic Ocean to ensure environmental protection and the sustainable use of marine resources. This requires international cooperation given the transboundary nature of the region.
- 13.1: in recent years, the Arctic's role in climate change has become much more prominent, with warming at almost twice the global average rate. Building resilience and adaptive capacity to climate disasters, especially for the local inhabitants, will be of prime importance for the Arctic region
- 13.2: the EU's Arctic policy is in line with the ambitious goals on climate change set in the Paris Agreement of limiting global average temperature increases to well below 2°. The EU has already committed to reducing its total greenhouse gas

emissions by 40% by 2030 and by 80% by 2050 compared to 1990 levels. The United Nations Framework Convention on Climate Change is another international legal framework that covers the Arctic. In 2021 the EU will update its Arctic Policy.

Outermost regions

The nine outermost regions – Guadeloupe, French Guiana, Martinique, Mayotte, Reunion Island and Saint-Martin (France), the Azores and Madeira (Portugal) and the Canary Islands (Spain) – are an extraordinary asset for the EU. They are rich in unique natural assets and hosts 80% of the Union's biodiversity. They also provide key valuable ecosystem services and enrich the EU economically, culturally and geographically. Further, they offer strategic access for the EU to the seas in the regions.

The key policy objectives relevant to SDG14 identified for the outermost regions based on the renewed strategic partnership communication document are as follows:

- 14.2: healthy ecosystems provide crucial goods for society, for instance clean air and water, and contribute to climate change adaptation and mitigation.
- 14.4: illegal fishing is an area of concern for the outermost regions, and stronger efforts in monitoring and fighting against illegal fishing will be important
- 14.A: Research and innovation as well as technology transfers are crucial for enabling the outermost regions to become frontrunners in many promising sectors. The Commission has committed a dedicated Coordination and Support Action to enhance the capacities of the outermost regions to participate in the EU's Research Framework Programme
- 6.4: water efficiency is mentioned in relation to the growing demand for water from larger tourism flows, where water saving measure and development of desalination plants will become important
- 8.1: sustainable economic growth is discussed in relation to self-sufficiency, and opportunities provided by new vectors of growth and job creation from the blue economy and value chains
- 8.3: development-oriented policies is of crucial importance to the outermost regions. Specific measures the Commission considers to take include setting up a dedicated initiative with the European Investment Bank Group to enhance the region's access to the European Fund for Strategic Investments.
- 8.4: resource efficiency for the outermost regions is primarily focused on energy and circularity, i.e. increasing energy efficiency technologies and re-uses of waste such as bio-waste compost
- 8.5: Supporting people from the regions to adapt their skills to new production systems and technologies, in particular to the digitisation of the economy, is a major area of focus for the EU
- 8.9: the focus for sustainable tourism is mostly on waste management and circularity. Seasonal tourism peaks generate large amounts of waste and managing compost of organic waste, re-use of products, repair and recycling and encourage waste prevention is key for sustainable tourism goals

- 11.3: the key area of concern for sustainable urbanisation mentioned is traffic congestion in cities or coastal strips, and difficult access to inland rural areas. Projects to make transport more sustainable and cleaner are being developed and can serve as good practice for other EU regions
- 11.6: reducing environmental impact of cities is connected to sustainable and clean transport (see SDG11.3) and waste generation from tourism (see SDG8.9)
- 12.1: sustainable consumption is targeted primarily through energy, implementing sustainable energy solutions, improving energy efficiency, and testing and developing renewable options
- 12.2: the key focus for sustainable management and efficient use of natural resources for the outermost regions is in terms of fisheries, exploiting it at sustainable levels, as well as sustainable use of ecosystem services
- 12.5: reducing waste generation is a huge priority for the outermost regions, especially during peak tourism season (see SDG8.9). Enhancing appropriate waste management initiatives involve increase the separate collection of waste, develop local compost of organic waste, re-use of products, repair and recycling and encourage waste prevention
- 13.1: the small size and remoteness of outermost regions make them particularly vulnerable to climate impacts – e.g. the rise of the sea level and extreme weather events such as the hurricane Irma that hit Saint Martin in 2017. The EU Solidarity Fund, which provides support to rebuild regions hit by disasters, contains specific provisions for the outermost regions, enabling funding to be disbursed from a lower threshold of damage
- 13.2: climate change policies are discussed in relation to the Voluntary Scheme for Biodiversity and Ecosystem services in Territories of European Overseas (BEST) initiative that includes climate adaptation in the outermost regionslxxi, LIFE the EU's instrument for environment and climate action, as well as a new preparatory project on climate change adaptation in the outermost regions launched in 2019 etc.

Appendix 6: Summary note of Member States survey

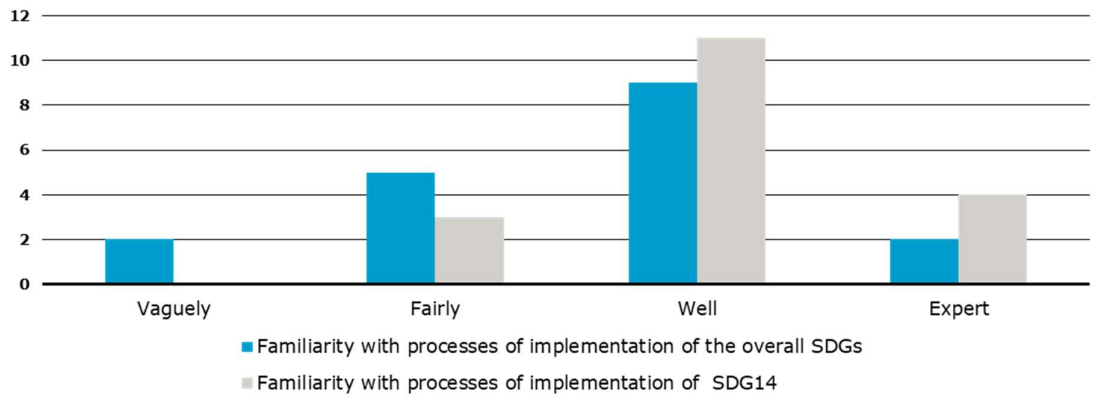
Summary note of Member States' survey

In order to get more information on the Member State status regarding the implementation of SDG 14, all national coordinating bodies were contacted via mail to fill in the online survey and if needed to be interviewed for clarification. 28 Member States were contacted and 18 responded to the survey and interview request. The countries that responded to the survey are: Austria, Belgium, Bulgaria, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Ireland, Luxembourg, Malta, Poland, Portugal, Spain and Sweden.

Hungary and Slovakia answered that they did not wish to complete the survey as they are landlocked countries. The UK answered that they did not complete the survey because of Brexit.

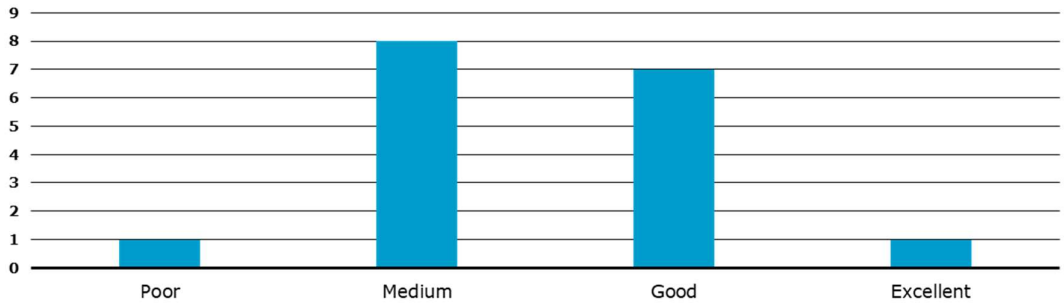
The goal of the self-assessment was to get a baseline on the status of the tracking and hands on policy development of the SDG14 and other ocean-related targets. Figure 24 below shows the distribution of the familiarity of the respondents with the processes of implementation of SDG14 and other SDGs.

Figure 24 Familiarity with processes of implementation of SDG14 and overall SDGs



Most respondents indicate a good or expert knowledge when it comes to SDG 14 related targets and a good to average knowledge of SDG targets overall. The content of the self-assessment focused on the SDG 14 targets. Figure 25 below shows the respondents' opinion on their country's overall progress of the SDG targets.

Figure 25 Member States' overall progress with SDG14 (self-assessment)



Throughout the self-assessment, it was noted that landlocked Member States often lack policies supporting SDG14 or lack standardised reporting on their policies concerning this goal. This can be a notable worry, considering that these countries also contribute to influencing the state of the oceans.

Figure 25 shows that all Member States, except Bulgaria, self-rated their progress as medium, good or excellent. Notably, France rated its progress as excellent. Yet, the Member States consider progress on achieving the indicators of SDG 14 limited. As can be seen in the survey question 'What are the challenges you have faced, or are currently facing, when implementing the SDG14?', the issue indicator by Member States is not the quality or the amount of policies, but rather the time it takes to see change in the indicators on EU level.

Department assessment

The first section of the survey focused on a verification of the departments in charge of the different aspects of SDG policy making and marine policy making (Spatial planning, Marine pollution, sustainable development). Table 2 shows the number of departments responsible per country followed by the type of departments mentioned.

Table 2 Departments responsible for SDGs and ocean-related targets in Member States

Country	Focus area*		
	Aquatic polution	Spatial planning	Sustainable development
Estonia	3	1	n/a
Belgaria	2	2	2
Greece	3	3	3
France	?	?	?
Malta	1	1	1
Finland	1	1	1
Cyprus	3	1	1
Spain	1	1	1
Ireland	1	1	1
Portugal	4	2	2
Belgium	1	1	all
Denmark	1	2	all
Italy	1	1	1
Poland	7	1	1
Sweden	1	2	4
Luxembourg	0	0	1
Germany	0	0	2
Lithuania	1	1	1

* departments identified

Ministry type	# mentions
Environment	23
Marine environment	6
Water	3
Foreign affairs	3
Infrastructure	3
Urban planning	2
Office of the prime minister	2
Fisheries	3
Finance/Economy	3
Agrigulture	4
Defence	2
Enterprise and innovation	2
Energy	1
Education, Research	2
EU affairs	1
Transport	2

The targets of SDG14 and other ocean-related targets are often dealt with by multiple departments, this fragmentation shows for instance the complexity of addressing multi-faceted issues like marine and aquatic pollution. Spatial planning is often covered by environment and/or urban planning type departments. Sustainable development is covered by either environment, the Prime Ministers head office, EU affairs or all departments.

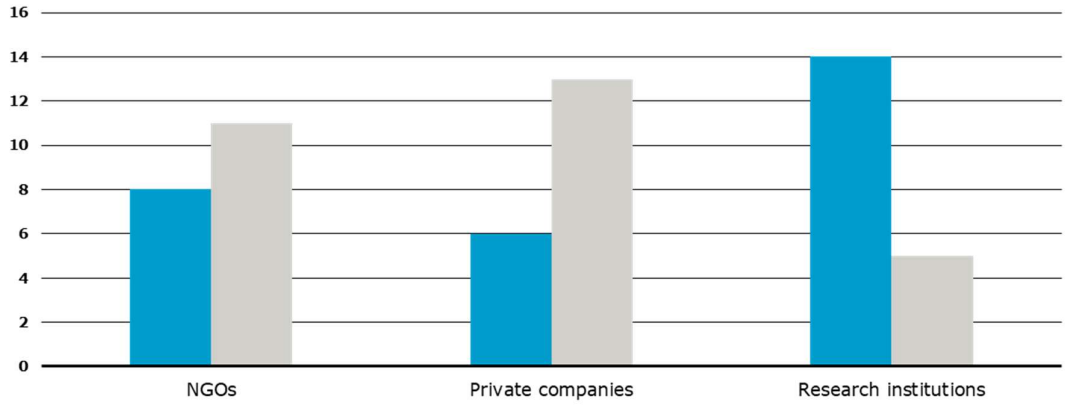
This indicates a very complex landscape where policymaking is performed by a variety of stakeholders within the national governments. Even to a greater extent than with marine and aquatic pollution.

In all countries (with the exception of Denmark) a working group or development council is created.

Partnership assessment

The second section of the survey focused on cooperation and partnerships. Most countries indicate to work together across governmental organisations, or intraregional at sea-basin level through organizations such as HELCOM, UNEP/Mediterranean Action Plan, European Network of Prosecutors for the Environment, OSPAR, and international organisations like the UN under the UN Convention on the Law of the Sea Countries also indicate to work together in scientific organisations such as EU IDDRI[lxxii] and IASS[lxxiii]. Each of the respondents indicated if they cooperate with NGOs, private companies or research institutions. Figure 26 shows that research cooperation was most common followed by an almost equal distribution of NGO's and private companies. Portugal also indicated a large number of cooperation initiatives with public organizations.

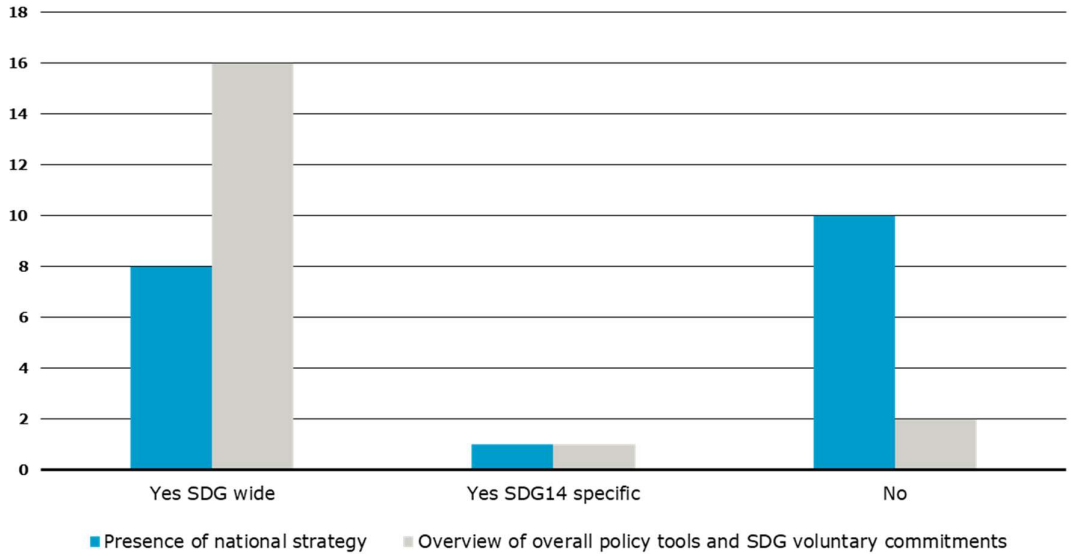
Figure 26 SDG14 cooperation initiatives



National actions assessment

Figure 27 shows that the majority of countries with the exception of France does not have a national strategy for reaching the SDG 14 targets. On the positive side all countries claim to have an overview of the policy tools and voluntary commitments. The policies listed by the respondents focused on SDG14 and other ocean-related targets have been crosschecked with the policy mapping table.

Figure 27 Presence of national strategy and overview policy tools

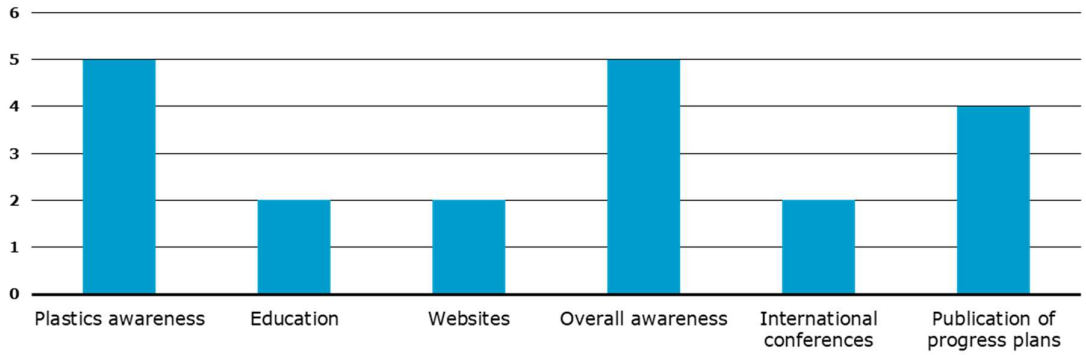


Most countries also indicate that they track all the SDG targets outlined in the 2030 Agenda and not only SDG 14 related targets. They however did not create any new targets. When prompted about best practices all respondents referred to one of their policy implementations, mostly MSP related. Portugal and Poland claim to have a specific SDG14 prioritizing strategy.

Assessment on dissemination

Figure 28 shows that *overall awareness campaigns* and *plastics focused awareness campaigns* are the most common tool for information dissemination. These campaigns cover multiple dissemination channels including TV commercials and online content. Portugal was the only Member State to mention knowledge networks (education) and websites in particular.

Figure 28 Presence of awareness-raising campaigns

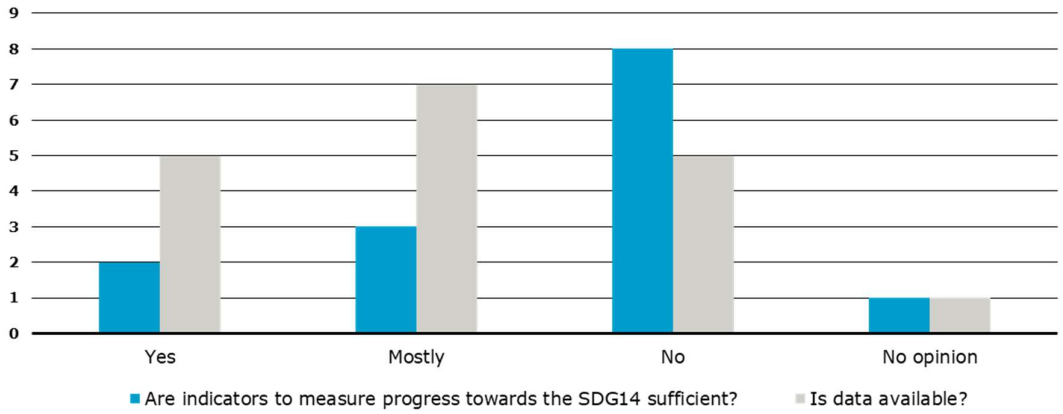


Assessment of status of indicators

The majority of countries indicated that the SDG 14 indicators for measuring progress are not sufficient.

Lithuania was the sole country indicating that their indicators are sufficient and clarified and that they are in line with national environmental targets with respective indicators and threshold values.

Figure 29 Indicator quality

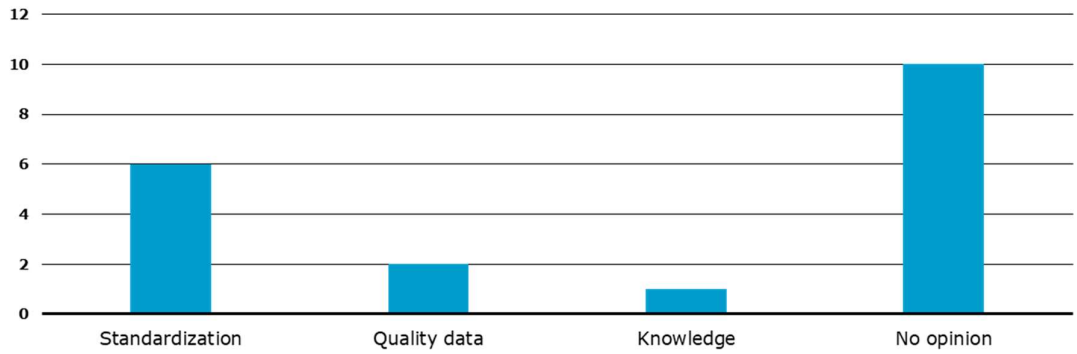


The indicated insufficiency of indicators contrasts the fact that most countries indicate that data is available (10/15) as demonstrated in Figure 6. When queried on what can be improved to increase indicator quality, standardization was the main suggestion.

Estonia mentioned quality of information and Malta a lack of knowledge. Poland mentioned the issue of fish stocks being measured by multiple countries with different financial means to communicate and perform the same quality of measurement.

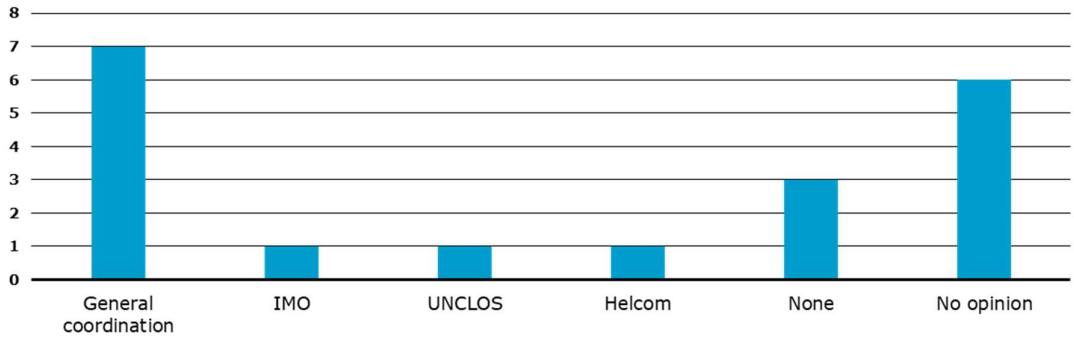
For clarification, fish stock assessments in the Baltic Sea are carried out by ICES. However, ICES' advice concerning the harvesting of different fish stocks is not always directly followed by EU Member States, according to feedback from the Polish Ministry of Maritime Economy and Inland Navigation. According to this Ministry, the cause of this is that before the decisions for the Baltic Sea at EU level are made, preliminary discussions on possible TAC and fish quota are made within the region by BALTFISH. BALTFISH is the Baltic Sea regional fisheries body. Within BALTFISH countries have different interests (e.g. recreational versus commercial fisheries). In addition, the BALTFISH countries have different financial statuses and do not all have the same ability to invest in projects that require a Member State' own contribution. Also, the countries differ in terms of their experience in leading international projects and research. The differences as mentioned above are for instance visible between EU-12 and EU-15 and between EU-25 and EU-28 Member States.

Figure 30 Actions to be undertaken to improve the quality of SDG14 indicators



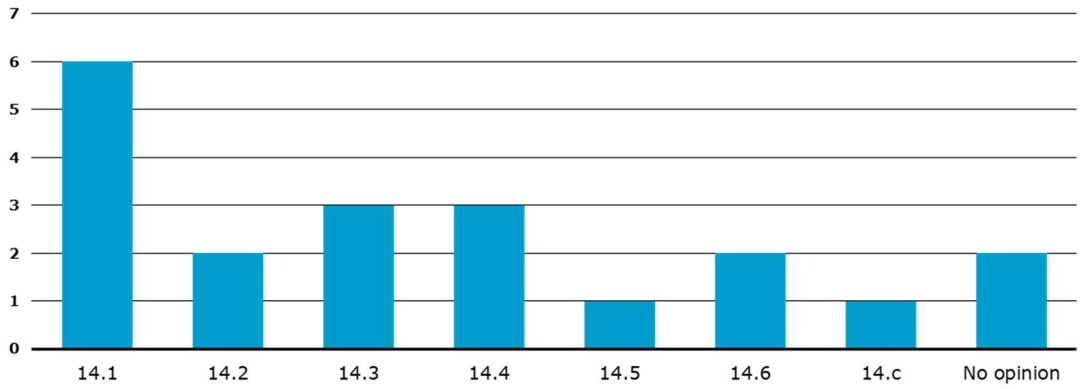
The standardization suggestion of Figure 30 is mirrored in the need for supranational involvement as can be seen in Figure 31. 6 countries indicated that supranational bodies should strive to increase general coordination or should seek for compatibility and coherence of targets and indicators and monitoring principles. HELCOM and IMO were mentioned by name and suggested to take a larger role, and it was suggested that the activities undertaken by the parties to the UNCLOS Convention could also play a role in improving the quality of indicators for SDG14. Other regional basin bodies were also mentioned but these were already included in the cooperation segment of this analysis. Denmark, Italy and Bulgaria found supranational involvement already sufficient.

Figure 31 Member States' opinion on the need for supranational involvement for the improvement of SDG14 indicators



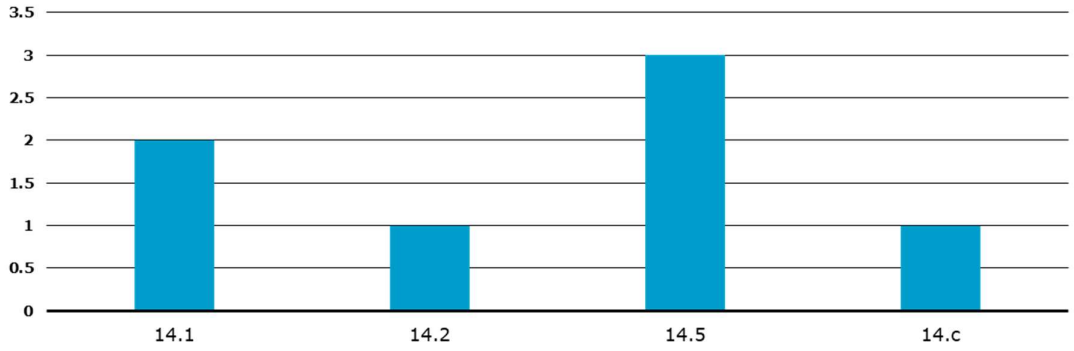
The drilldown to the status of the sub targets and gaps of Figure 32 shows that the largest amount of work to be done is in SDG 14.1 (aims to prevent and reduce marine pollution of all kinds), followed by SDG 14.3 (aims to minimize and address the impacts of ocean acidification) and SDG 14.4 (targets overfishing and unregulated fishing). Two countries indicated that all targets show gaps. This shows a focus of the Member States on the plastics pollution of oceans followed by a focus on acidification. Most Member States did not mention target 14.6 (aims on prohibiting certain forms of fisheries subsidies that contribute to overfishing and refrain from new such subsidies) in the survey, neither did they mention that this target is a political type of target.

Figure 32 Perceived gap in achievement of SDG14 targets



Another explanation for the distribution of gaps could be the current status of tracking the indicators. Figure 33 shows which targets are tracked by Member States.

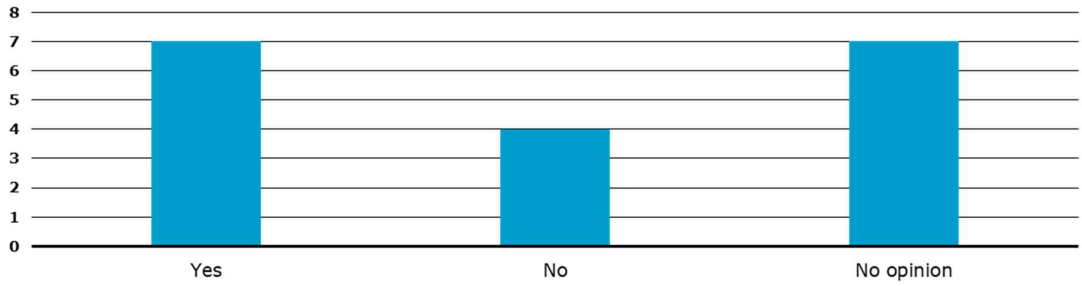
Figure 33 Monitoring of indicators



Few Member States actively track indicators. Some shared national statistics repositories but after an in-depth analysis it was found that the indicators were mentioned but no values were registered. These were not included in Figure 33.

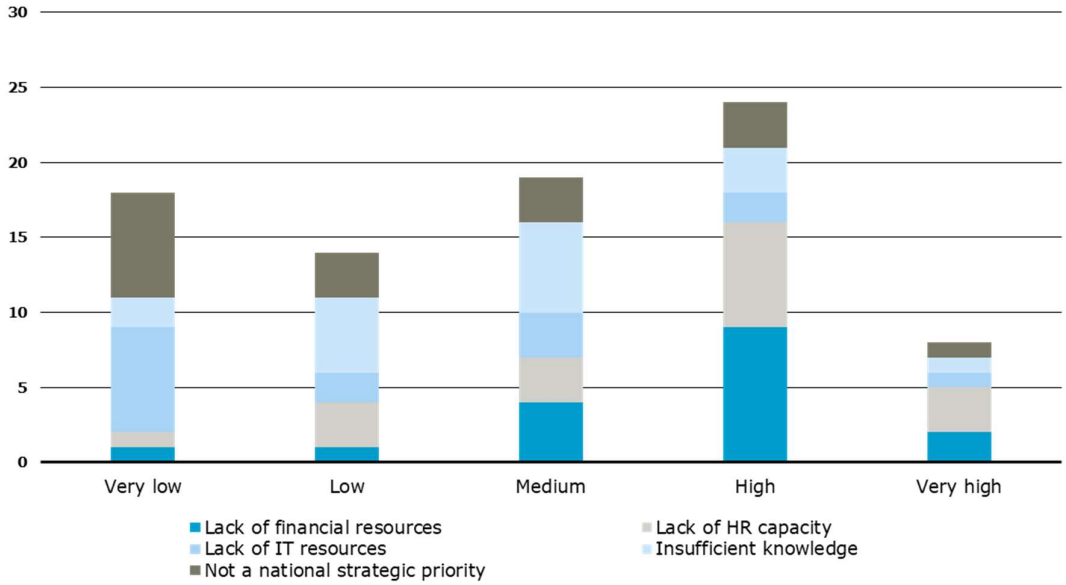
When asked if benefits match costs, the majority of respondents either confirmed or had no opinion, four Member States answered no, as can be seen in Figure 34. These dispersed answers can be attributed to the difference in economic strength of each of the Member States.

Figure 34 Perceived efficiency of investing in measures that support the achievement of SDG14



Since few targets are actively monitored, the survey enquired about the barriers impeding successful monitoring and achievement of targets.

Figure 35 Perceived barriers to SDG14 targets' achievement



The lack of financial resources was indicated as the number one barrier in Figure 35, followed by lack of human resources capacity and insufficient knowledge. IT resources and lack of strategic priority were considered less relevant. In addition, respondents indicated that time seemed to be a major barrier, both on changing behaviours in order to reduce pollution, and for monitoring the status of the oceans. One land-locked country also indicated that a lack or landlocked related indicators to SDG14 impeded progress.

Three Member States were not willing to fill in the survey: UK, Hungary and Slovakia. Brexit forms the reason behind the UKs choice not to participate. The main reason for Hungary and Slovakia is that they are landlocked countries. Luxembourg also mentioned in their response that they do not have a specific SDG14 policy because they are a landlocked country, however Luxembourg filled in the majority of the survey. Slovakia mentioned that they do not have national activities regarding the seas and oceans but does indicate that they co-operate on ocean protection under the umbrella of the EU MSFD and participate on the agenda of the EU Marine Directors. In addition, Slovakia mentioned that they are a member of the International Commission of the Protection of the Danube River, which helps to protect the Black Sea, because water from 96% of the Slovak territory flows into the black sea. Hungary indicates that they are only indirectly connected to SDG14 and are therefore not able to provide relevant information.

Appendix 7: In-depth assessments

Blue Growth Strategy

Introduction

The EU Blue Growth Strategy (BGS) aims to support sustainable growth in the marine and maritime sectors as a whole. Seas and oceans are drivers for the European economy and have great potential for innovation and growth (EC, 2020a). It is the maritime contribution to achieving the goals of the Europe 2020 strategy for smart, sustainable and inclusive growth.

- The BGS consists of the following four components (EC, 2017b, 2020a, 2020b):
- Develop sectors that have a high potential for sustainable jobs and growth, including established sectors (Marine living resources, Marine non-living resources, Marine Renewable energy, Port activities, Shipbuilding and repair, Maritime transport and Coastal and maritime tourism) and emerging and innovative sectors (Blue bioeconomy and biotechnology, Marine minerals, Desalination, Maritime defence and Submarine cables).
- Enable essential components to provide knowledge, skills and literacy, legal certainty, and security in the blue economy, including:
    - marine knowledge to improve access to information about the sea and improve our understanding of how the seas behave;
    - blue skills and ocean literacy to reduce skill gaps between education offer and labour market needs, improve communication and cooperation between education and industry, enhance the attractiveness and awareness of career opportunities in the blue economy, and boost ocean literacy;
    - maritime spatial planning (MSP) across borders and sectors to ensure human activities at sea take place in an efficient, safe and sustainable way; and
    - integrated maritime surveillance to provide authorities interested or active in maritime surveillance with ways to exchange information and data – making surveillance cheaper and more effective.
- Promote regional (EU) sea basin strategies to ensure tailor-made measures and to foster cooperation between countries, including that for the Adriatic and Ionian Seas, Arctic Ocean, Atlantic Ocean, Baltic Sea, Black Sea, Mediterranean Sea and the North Sea.
- Boost investments for innovative Blue Growth projects, including new technologies, new products and new services, through European Structural and Investment Funds (ESIF)[lxxiv], Connecting Europe Facility (CEF), Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME), the Investment Plan for Europe (IPE) and LIFE+.

The BGS, thus, builds on and integrates components from existing EU sector development policies, planning frameworks, cooperation strategies and funding mechanisms.

Contribution to SDG14

The implementation of the EU Blue Growth Strategy can contribute to achieving the SDG14 targets, most clearly in relation to (based on EC, 2020c):

- **SDG 14.1 Prevent and significantly reduce marine pollution of all kinds**: The BGS needs to comply with the Marine Strategy Framework Directive (EC, 2020b) and, hence, human-induced eutrophication and associated adverse effects need to be minimised. The BGS focusses on the development of established and innovative sectors that have a high potential for sustainable jobs and growth, while it also contributes to the prevention and reduction in marine pollution by enabling maritime knowledge, literacy, spatial planning and basin strategies.
- **SDG 14.2 Manage and protect ecosystems**: Similarly, the BGS needs to be compatible with ecological sustainability according to the Marine Strategy Framework Directive (EC, 2020b) while maritime spatial planning (MSP) aims to deliver such sustainable growth for maritime economies (EC, 2018). The BGS strongly focusses on the development of a diverse range of sectors that have a high potential for sustainable jobs and growth (including established and innovative sectors), the enabling of maritime knowledge, skills and literacy, spatial planning and integrated surveillance, and the promotion of international sea basin strategies.

In a more indirect manner, the EU Blue Growth Strategy can contribute to achieving (based on EC, 2020c):

- **SDG 14.4 Regulate harvesting and end IUU fishing**: The BGS could contribute to reducing overfishing and destructive fishing practices as well as implementing science-based management plans, by enabling components that provide integrated maritime surveillance, marine knowledge (such as sustainable fishery technology development), ocean literacy (such as through the EU4Ocean Platform) and maritime spatial planning.
- **SDG 14.7 Increase economic benefits to SIDS**: The BGS could enhance the sustainable use of marine resources and associated economic benefits for small island developing States (SIDS) and least developed countries, through corresponding development of i) sectors that have a high potential for sustainable jobs and growth (including established and innovative sectors), ii) marine knowledge (e.g. sustainable fishery technologies), iii) blue skills (e.g. alignment between education and industry) and iv) investments for innovative Blue Growth projects (e.g. ocean energy technologies). Moreover, external policies, such as international development cooperation, contribute to economic benefits for SIDS and least developed countries.
- **SDG 14.a Increase scientific knowledge and research**: The BGS could contribute to the increase in scientific knowledge, development of research capacity and transfer of marine technology, by enabling marine knowledge, enhancing ocean literacy (such as through the European Atlas of the Sea) and boosting investments for innovative Blue Growth projects.
- **SDG 14.b Provide access for small-scale artisanal fishers to marine resources and markets:** The BGS could provide access for small-scale artisanal fishers to marine resources and markets, through the development of sectors that have a high potential for sustainable jobs and growth (including established and innovative sectors) and investments for innovative Blue Growth projects.

Table 3 Assessment of the Blue Growth Strategy against SDG14 targets (own figure)

	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.a	14.b	14.c
Blue Growth Strategy	++	++	N	+	N	N	+	+	+	N

(++) direct and positive relation; (+) indirect positive relation; (N) neutral; (-) negative relation

Performance evaluation[lxxv]

The concept of Blue Growth operates in the scope of smart, sustainable and inclusive growth, while taking a precautionary approach (i.e. preventive action; rectify environmental damage; polluter pays). The main objective of the EU Blue Growth Strategy is expanding maritime activities, supported by marine ecosystem services, as a driver for sustainable growth in the marine and maritime sectors, through technological progress and innovations while securing sustainable management of coastal and marine resources.

At the beginning of 2019, the EC has encouraged the Outermost Regions to draft Blue Economy Strategies. The aim is to sustainably use ocean resources, protect biodiversity, target structural investments (EMFF; structural funds). The Blue Economy Strategies in Outermost Regions are considered an important factor for socio-economic development (see EC, 2017a).

The expansion of these innovative maritime activities will, however, have an impact on coastal and marine resources. Depending on how the BGS is implemented, such as policies sustaining tourism or offshore wind energy, the expansion of innovative maritime activities may jeopardize the achievement of the Good Environmental Status of coastal and marine ecosystems.

Moreover, it is argued that the BGS is may become a simple technology-oriented approach and, thus, underestimates the importance of the social dimension of change. This is further complicated by social and institutional barriers to these new developments, such as previous (bad) experiences with innovations as well as laws and regulations. A core challenge to innovations is to facilitate change, given existing sensitivities of coastal and marine ecosystems, socio-economic conditions and institutional settings. Recent development of the BGS do, however, focus on blue skills and ocean literacy – aiming to bridge the potential gap between research, education and industry (EC, 2020b). Also, several communities of practice have been established, such as the Maritime Forum (which aims to improve communication amongst EU maritime policy stakeholders), EU4Ocean (which aims to facilitate organizations and initiatives to connect, collaborate and mobilize efforts on ocean literacy) and BlueInvest (which aims to boost innovation and investment in sustainable technologies for the blue economy, by supporting readiness and access to finance for early-stage businesses, SMEs and scale-ups).

Overall, the BGS provides opportunities for ecosystem services based smart, sustainable and inclusive growth of coastal and marine ecosystems. Its success depends, however, on how the BGS is implemented (environmental sustainability) as well as whether the technological innovation is accompanied by social and institutional innovation.

Table 4 Evaluation criteria applied to the relation between SDG14 and the Blue Growth Strategy

Criterion	Blue Growth Strategy
Effectiveness	The BGS has not yet been fully operationalized and implemented over a sufficient period of time to draw conclusions regarding its effectiveness.
Efficiency	The BGS builds on the ecosystem services concept for the development of innovative maritime activities, hypothetically enabling smart, sustainable and inclusive growth. There is, however, a risk that these activities lead to increased use of, competition for and/or pollution of coastal and marine resources[lxxvi]. There may also be social and institutional barriers to these new developments, albeit that the BGS has recently established various initiatives to overcome such issues.
Coherence	The BGS is coherent in the sense that it builds on and integrates components from existing EU sector development policies (such as the MSFD; EC, 2008), planning frameworks (such as MSP), cooperation strategies and funding mechanisms. On the other hand, the BGS entails the development of a wide range of sectors that may compete for and/or cause degradation of the same coastal and marine resources.
Relevance	The BGS is particularly relevant for SDG 14.1 (Prevent and significantly reduce marine pollution of all kinds), SDG 14.2 (Manage and protect ecosystems), SDG 14.7 (Increase economic benefits to SIDS) and SDG 14.a. (Increase scientific knowledge and research).
EU Added value	The EU has launched the BGS for stimulating economic growth in European seas. The BGS provides opportunities for such smart, sustainable and inclusive growth of coastal and marine ecosystems. Its success depends on whether attention is given to sensitivities of coastal and marine ecosystems, socio-economic conditions and institutional settings.

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Interviews (not sure how to reference these provided by Ramboll)

Common Fisheries Policy

Introduction

The Common Fisheries Policy (CFP; EC, 2013) was first introduced in the 1970s and went through successive updates since then; the most recent CFP took effect on 1 January 2014 (EC, 2020f). The aim of the CFP is to ensure that fishing and aquaculture are sustainable (environmentally, economically and socially) and a source of healthy food for EU citizens. Its ambition is to foster a dynamic fishing sector and ensure a fair living standard for fishing communities.

The CFP is designed to manage a common resource, by setting rules for managing fishing fleets and for conserving fish stocks in Europe. It thereby works along the following primary policy areas (EC, 2020f):

- Fisheries management (EC, 2020d): The fisheries management dimension of the CFP aims to ensure high long-term fishing yields (i.e. maximum sustainable yields; MSY) for all stocks, through input and output controls. Input controls include rules on access to waters, fishing effort controls and technical measures. Output controls include total allowable catches and quota.
- International policy (EC, 2020c): The international dimension of the CFP focusses on International Ocean Governance (IOG), Regional Fisheries Management Organisations (RFMOs), Sustainable Fisheries Partnership Agreements (SFPAs) and fighting Illegal, Unreported or Unregulated (IUU; EC, 2008a) fishing. IOG aims to keep the world's seas and oceans clean, safe and secure, through the UN Convention on the Law of the Sea (UNCLOS) and the UN Fish Stocks Agreement (UNFSA). RFMOs guarantee the management, conservation and sustainable exploitation of living marine species, by setting catch limits, technical measures and control obligationslxxvii. SFPAs aim towards resource conservation and environmental sustainability in third countries' Exclusive Economic Zones that are open to EU fleets, by establishing EU-conform regulated and guaranteed fishing environments. Finally, IUU fishing is combatted by publishing blacklisted vessels and non-cooperative countries as well as penalising offenders.
- Market and trade policy (EC, 2020e): The common organization of markets aims to stabilise markets and guarantee fair competition and income for producers, while common marketing standards lay down uniform requisites for seafood sold our bought in the EU, ensuring a safe and transparent market. This is achieved through organisation of the sector (producers' organisations, production and marketing plans), marketing standards (uniform characteristics for fishery products), consumer information (information on fishery and aquaculture products), competition rules (common organisation of the markets) and market intelligence (European Market Observatory for fishery and aquaculture products).
- Funding of the policy (EC, 2020b): The European Maritime and Fisheries Fund (EMFF) is the fund for the EU's maritime and fisheries policies that aims to promote a growth and job based recovery in Europe. It aids fishermen to adapt to sustainable fishing, supports coastal communities to diversify their economies, finances projects that create new jobs for the sector, and supports sustainable aquaculture developments.

The CFP also includes rules on aquaculture and stakeholder involvement through, respectively, a coordinated EU aquaculture policy and Advisory Councils (ACs).

Contribution to SDG 14

The implementation of the Common Fisheries Policy contributes to achieving the SDG 14 targets, most clearly in relation to (based on EC, 2020a)[lxxviii]:

- **SDG 14.4 Regulate harvesting and end IUU fishing**: The CFP strongly focuses on the regulation of harvesting, overfishing and illegal, unreported, unregulated and destructive fishing, through fisheries management (reduction in discarding[lxxix]; landing obligation[lxxx]; prohibition of driftnet fisheries; aquaculture), international policy (RFMOs; SFPAs; IUU) and through funding of sustainable fishing practices and aquaculture developments (EMFF). This is reinforced by the recently published Farm-to-Fork Strategy for a fair, healthy and environmentally-friendly food system (EC, 2020g).
- **SDG 14.6 Prohibit over-capacitating and IUU-encouraging subsidies**: The CFP strongly focusses on the creation of markets for fishery and aquaculture products that ensure environmental sustainability and economic viability of the sector, through fisheries management (reduction in discarding; landing obligations), international policy (IUU), and market and trade policy (i.e. the common organization of markets). The EMFF is closely related to SDG 14.6 as it supports (co-finances) the development of sustainable fishing/aquaculture practices, diversified fishing communities and new jobs in the sector. Note, again, this is reinforced by the Farm-to-Fork Strategy (EC, 2020g).

The implementation of the Common Fisheries Policy can contribute to achieving the SDG 14 targets, in relation to (based on EC, 2020a)[lxxviii]:

- **SDG 14.2 Manage and protect ecosystems**: In the CFP the sustainable management and protection of marine and coastal ecosystems focusses on those aspects related to fishery and aquaculture production activities (provisioning ecosystem services), through fisheries management (reduction in discarding; landing obligation; prohibition of driftnet fisheries; regulation on the use of alien and locally absent species in aquaculture), technical measures (EC, 2019) and funding of sustainable fishing practices and aquaculture developments (EMFF).
- **SDG 14.5 Conserve at least 10% of coastal and marine areas**: In the CFP the conservation of coastal and marine areas focusses on those aspects that relate to fishery and aquaculture production activities, through specific provisions[lxxxi], international policy (RFMOs) as well as funding of sustainable fishing practices and aquaculture developments (EMFF).
- **SDG 14.7 Increase economic benefits to SIDS**: The CFP could enhance the sustainable use of marine resources and associated economic benefits for small island developing States and least developed countries, through fisheries management (aquaculture) and international policy (RFMOs; SFPAs; IUU).
- **SDG 14.a Increase scientific knowledge and research**: The CFP allocates some of it funds to research and development in fisheries and blue economy, through

fisheries management (regulation on the use of alien and locally absent species in aquaculture), international policy (RFMOs) and their funding policy (EMFF).

- **SDG 14.b Provide access for small-scale artisanal fishers to marine resources and markets:** The CFP promotes coastal communities to diversify their economies and finances projects that create new jobs for the sector, through international policy (SFPAs) as well as funding of sustainable fishing practices and aquaculture developments (EMFF).
- **SDG 14.c: Enhance conservation and sustainable use of oceans**: In the CFP the conservation and sustainable use of oceans focusses on those aspects that relate to fishery and aquaculture production activities, through international policy (RFMOs; IUU) as well as market and trade policy.

Table 5 Assessment of the linkages between the Common Fisheries Policy and SDG 14 targets (own figure)

	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.a	14.b	14.c
Common Fisheries Policy	N	+	N	++	+	++	+	+	+	+

(++) direct and positive relation; (+) indirect positive relation; (n) neutral; (-) negative relation

Performance evaluation (based on stakeholder interviews and feedback from DG-MARE)

The CFP predates the Sustainable Development Goals and, hence, the CFP was not designed with the aim of reaching SDG14 targets. Still, there are several clear contributions or linkages between CFP and the ocean related SDG targets.

One of the key objectives of the CFP is sustainable fisheries, achieved through the maximum sustainable yield target (EC, 2020d), and is thereby closely aligned with SDG 14.4. Consulted stakeholders are of the opinion that the CFP has been successful when it comes to this conservation policy, in particular through establishing fishing quotas and improving monitoring and control systems. Over the last decade, the consulted stakeholders note, there has been good progress in the more sustainable management of stocks, mainly due to better fisheries policies (clear management targets and corresponding timelines), better control (IUU regulation) and changed consumer behaviour (more attention to sustainable food). Consulted stakeholders mention that the strongest fishery policy instruments are the Multi Annual Plans (MAP) and related quota settings (defining how to sustainably manage fish stocks)[lxxxii], which have been established for the Baltic Sea, the North Sea, the Western Mediterranean Sea and the Western waters. Even though MAPs may have potential negative economic impacts in the short term (current low quota and loss of incomes), these are outweighed by the potential benefits in the long term (future sustainable yields and incomes) (see e.g. EC, 2006).

Regional cooperation on conservation measures in fisheries is an important aspect of the CFP and critical for several ocean related SDGs. According to the consulted stakeholder, regional cooperation is starting to work but is an ongoing process to implement. This is

mainly due to governance contexts, where fisheries management in international waters is only partly the competence of EU countries (such as in the case of the Baltic, Mediterranean North and Black Sea and, also, in relation to Norway and Brexit). Regional management plans are powerful tools in this respect, but non-EU countries may not adhere (catch and fishing effort limits, technical measures and/or control obligations) and may be difficult to control (non-compliance and legal implications). In addition, it was highlighted that there are global pressures from outside the ocean competence that affect sustainable fisheries management (such as climate change, leading to alterations in sea surface temperature, acidity and salinity with subsequent implications for biological and economic sustainability; see e.g. Thøgersen et al., 2015).

The consulted stakeholders believe that the CFP faces some drawbacks in its potential to contribute to the SDG 14. First, the CFP has several objectives and builds on various principles, some of which are not entirely coherent with the Marine Strategy Framework Directive (MSFD; EC, 2008b). For example, well intended financing mechanisms (targeting some species) may have indirect negative impacts (on other species). Second, there is divergence in the underpinning ecosystem approach (which forms the basis of the desired maximum sustainable yield target) and precautionary principle (which focusses on avoiding undesired outcomes). Third, species and ecosystems are sustainably managed mainly for their provisioning ecosystem services – albeit that the CFP has provisions where measures need to be ecosystem-based and aligned with the Marine Strategy Framework, Habitats and Birds Directives (EC, 2008b; EC, 1992; EC, 2009). Finally, more attention could be given to impact assessments prior to authorising fishing activities while considering that wider species are implicated. Advances have, however, been made in this area by the ICES Working Group on Multispecies Assessment Methods (WGSAM), which aims at enabling research on predator-prey interactions for developing advice on the ecosystem approach to fisheries management.

Overall, the consulted stakeholders conclude that the CFP has contributed to several SDG 14 and other ocean-related SDG targets. First, through significant improvements in stocks – except, perhaps, in the Mediterranean and for few of the species. Second, through regional cooperation on sustainable fisheries and ecosystem management that is progressing well, though noting challenges in relation to non-EU countries (adherence; control). Finally, through disbursed research funding for the implementation of the CFP that is considered largely satisfactory. The consulted stakeholders do, however, argue that wider ecosystem services need to be considered in ecosystem-based fisheries management as to better contribute to some of the other SDG 14 targets (in particular 14.2 and 14.5).

Table 6 Evaluation criteria applied to the relation between SDG 14 and the Common Fisheries Policy

Criterion	Common Fisheries Policy
Effectiveness	The connection between SDG 14.4 and 14.6 and CFP is strong and effective, in particular when it comes to achieving maximum sustainable yield targets, due to better fisheries policies (clear management targets and corresponding timelines), better control (IUU regulation) and changed consumer behaviour (more attention to

Criterion	Common Fisheries Policy
	sustainable food). Species and ecosystems are, however, mainly managed for their provisioning services.
Efficiency	The strongest fishery policy instruments are the Multi Annual Plans (MAP) and related quota settings (defining how to sustainably manage fish stocks), which have been established for the Baltic Sea, the North Sea, the Western Mediterranean Sea and the Western waters. Potential short term negative impacts are outweighed by the potential long term benefits.
Coherence	The CFP (as SDG 14) has several objectives and builds on various principles, some of which are not entirely coherent with the MSFD – such as the diverging underpinning precautionary principle and ecosystem approach.
Relevance	The CFP is relevant for all SDG 14 targets, except for SDG 14.1 (Prevent and reduce marine pollution of all kinds) and SDG 14.3 (Minimize and address the impacts of ocean acidification).
EU Added value	Overall, the CFP has resulted in significant improvements in stocks, advanced regional cooperation on sustainable fisheries and ecosystem management, and disbursed satisfactory research funding – thus contributing to various SDG 14 targets. Challenges remain in relation to non-EU countries and wider ecosystem-based fisheries management.

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European Maritime Fisheries Fund (EMFF)

Introduction

The European Maritime and Fisheries Fund (EMFF) is one of the five European Structural and Investment Funds which complement each other to deliver more jobs and growth in the EU. The EMFF has an overall budget of €6.4 billion for the period 2014-2020[lxxxiii]. Most of the available funding supports sustainable fisheries and aquaculture under shared management (i.e. through national operational programmes). A share of the EMFF allocation is directly managed by the European Commission and is primarily geared towards maritime policy priorities, such as maritime spatial planning, maritime surveillance, marine knowledge, sea basin strategies and piloting the blue growth strategy in coastal, insular and outermost regions of the EU. The EMFF helps fishermen in the transition to sustainable fishing; supports coastal communities in diversifying their economies; finance projects that create new jobs and improve quality of life along European coasts; and supports sustainable aquaculture developments.

The EMFF is used to co-finance projects, along with national funding. Each country is allocated a share of the total EMFF budget, based on the size of its fishing industry and more precisely, on the level of employment and production, as well as the share of the small-scale fleet in the overall fleet. Thereafter, each Member State draws up an operational programme, indicating how it intends to spend the money. Once the European Commission (EC) approves this programme, it is up to the national authorities to select the projects that will be funded. The national authorities and the EC are jointly responsible for the implementation of the programme.

Contribution to SDG14

There is a relationship between EMFF and the achievements in realising the different targets (see Table 1). Direct link between EMFF and SDG14 are in place for the following targets:

- **SDG14.4 Effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing**: the funding helps fishermen in transition to sustainable fishing.
- **SDG14.5 Conserve coastal and marine areas**: EMFF funding supports the development of innovative fisheries and aquaculture with lower impact on the marine ecosystem.
- **SDG14.6 Prohibit over-capacitating subsidies**: in October 2016, the EU tabled a proposal at the WTO to ban fisheries subsidies that contribute to overcapacity, overfishing or IUU fishing. However, a binding agreement was not reached, and discussions have been postponed (EU Commission 2019). Concretely, the eligibility conditions in the regulation ensure that harmful effects are avoided (in particular the ineligibility of operations that increase fishing capacity).
- **SDG14.7 Increase economic benefits from sustainable use of marine resources**: the EMFF supports various initiatives by fishermen and fishing

communities to increase the economic benefits from fisheries, with a focus on value chain development.

- **SDG14.A Increase scientific knowledge, research and technology for ocean health**: under EMFF funding is made available for scientific research, both through the national programs and through the budget managed by the European Commission.
- **SDG14.B Provide access for small-scale artisanal fishers to marine resources and markets**: the EMFF has funded the establishment of Fisheries Local Action Groups (FLAGS) which seek to stimulate local development projects for the sustainable development fishing and aquaculture areas. FARNET is the technical assistance that helps implementing Community-Led Local Development (CLLD) under the European Maritime and Fisheries Fund (EMFF).[lxxxiv]

Indirectly, the EMFF can also be linked to the following targets:

- **SDG14.1 Reduce marine pollution**: EMFF funding supports measures for the collection of marine litter by the fishing sector and other initiatives implemented under the Community-Led Local Development (CLLD) and the Integrated Maritime Policy (Art. 80.1.b and c). These measures and initiatives are potentially relevant to marine litter mitigation.
- **SDG14.2 Manage and protect ecosystems**: measures taken under EMFF can contribute to achievement of GES (Utizi et al. 2018).
- **SDG14.3 Minimize and address the impacts of ocean acidification:** the impacts are minimized and addressed via enhanced scientific cooperation at all levels.

The EMFF cannot be linked to the following target:

- **SDG14.C Enhance the conservation and sustainable use of oceans and their resources**: by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources.

Table 7 Relation between European Maritime Fisheries Fund (EMFF) and SDG14 (own figure)

	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.a	14.b	14.c
EMFF	+	+	+	++	++	++	++	++	++	N

(++) direct and positive relation; (+) indirect positive relation; (N) neutral; (-) negative relation

Performance Evaluation

Since EMFF predates the SDG14 goals, one should be careful in drawing firm conclusions on the performance of the EMFF in achieving SDG14 targets. The EMFF was not designed to reach these targets. Table 2 presents and summarized some of the main issues raised during the interviews.

Table 8 Evaluation criteria applied to the European Maritime Fisheries Fund

Criterion	European Maritime Fisheries Fund (EMFF)
Effectiveness	The EU sets the general rules regarding the EMFF and Member States put in place the precise eligibility rules and selection criteria.
Efficiency	Complex rules reduced the efficiency of making use of the EMFF, especially for small companies. The interviewees indicate that the EMFF is not used strategically enough.
Coherence	The EMFF is the tool of the European Commission to support Member States to achieve the aims and objectives of the Common Fisheries Policy and of the Union maritime policy. The European Commission has set 6 Union Priorities in respect of the objectives for using EMFF funding.
Relevance	On 13 June 2018 the European Commission published a new proposal for a regulation on the European Maritime and Fisheries Fund as part of the next EU budget framework for the period 2021-2027. The proposal aims to continue supporting the achievement of the objectives of the Common Fisheries Policy and of the Union maritime policy. The future fund will also support International ocean governance. It also aims to simplify the delivery of the EMFF by allowing Member States to target support to their strategic priorities in a more flexible manner.
EU Added value	The EMFF helps fishermen in the transition to sustainable fishing; supports coastal communities in diversifying their economies; finance projects that create new jobs and improve quality of life along European coasts; and supports sustainable aquaculture developments.

Recommendations

One of the main issues for the future is to further improve policy in line with evaluation recommendations and stakeholder views. The focus is on evolution rather than radical changes. This means that future support for fisheries and maritime policies should be targeted to deliver on key Common Fishery Policy objectives, to address persisting market failures in particular related to enabling conditions to facilitate, innovation and market development in the blue economy (including the development of local economies in coastal communities) and to respond to emerging issues.

On 12 June 2018 the European Commission proposed a new regulation on the European Maritime and Fisheries Fund as part of the next EU budget framework for the period 2021-

2027. The proposal aims to simplify the delivery of the EMFF by allowing member states to target support to their strategic priorities in a more flexible manner in their specific context. The Commission's proposal is in line with SDG 14.6 through clear conditions that avoid harmful subsidies, in particular a general ineligibility of capacity-enhancing operations and precise conditions for fleet subsidies. There may be potential negative impacts in the Parliament's and Council's amendments but no prejudgement can be made on the outcome of the negotiations.

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International Ocean Governance

Introduction

In November 2016, the European Commission and the EU's High Representative adopted a joint agenda on international ocean governance to safeguard the future of our oceans through 50 proposed action points that focused on safe, clean and sustainably managed oceans for Europe and around the world. This agenda is an integral part of the EU's response to the SDGs set out under UN 2030 Agenda, in particular SDG14. The objectives of the agenda are spread across three pillars:

- Improving international ocean governance framework
- Reducing pressure on oceans and seas, creating conditions for a sustainable blue economy
- Strengthening international ocean research and data

Contribution to SDG14

The actions taken by the EU in recent years, as well as aspirations for future development, are aligned with contributing to achieving the following SDG14 targets:

- **SDG14.1 reduce and prevent pollution:** targeting marine litter through the EU Strategy for Plastics in a Circular Economy, providing support to monitor and reduce pollution in the Mediterranean, and proposing adoption of measures to prevent marine pollution associated with fishing activities in RFMOs to which it is party to. At the regional level, the EU has actively supported developing and implementing action plans targeting marine litter in the Northeast Atlantic, the Mediterranean and the Baltic under the Regional Seas Convention (RSC), and has provided funding of €1.4 million for implementing the Mediterranean Action Plan under the Barcelona Convention (European Commission 2019a). At the international level, the EU has supported the adoption of the UNEA Resolution on marine litter and microplastics, and dedicated €9 million to a project aimed at addressing marine litter at source in hot-spot countries and rivers in East and Southeast Asia. In the Pacific, the EU is providing €17 million to support Pacific countries in waste management programmes and addressing issues relating to health and well-being, marine litter and biodiversity conservation. In 2018, Europol initiated an unprecedented international law enforcement operation in cooperation with other key agencies to target crimes against marine pollution law across 58 countries. Within the EU, the Commission launched the Single-Use Plastics Directive in 2018, aiming to reduce the 10 most commonly plastic items found in the marine environment. As part of the Directive, an EU-wide ban of single use plastic cotton buds, straws, plates, cutlery, beverage stirrers, balloon sticks, oxo-degradable plastics, and polystyrene containers used in food and beverages is to be established by 2021 (Copello de Souza 2019). Extended Producer Responsibility (EPR) schemes covering the cost of collection, transport and treatment of fishing gear is to be established by 31 December 2024.SDG14.2 manage and protect ecosystems: is a core objective of EU Marine policies, as outlined under the Marine Strategy Framework

Directive (MSFD) – the overarching framework to conservation and reducing pressures placed on the marine environment (EU Commission 2008). Preserving and restoring ecosystems is also highlighted under the 7 building blocks for transition to a climate-neutral Europe by 2050 (EU Commission 2018b). The EU has dedicated specific funding to restore marine and coastal ecosystems around the world, including the Mediterranean, Southeast Asia and the African, Caribbean and Pacific (ACP) countries

- **SDG 14.4 regulate harvesting and end illegal, unreported and unregulated (IUU) fishing:** the EU utilises various means of international cooperation and trade incentives to target IUU fishing. Through dialogue with 50 counties in major fishing regions, the EU has encouraged reform in their control and management system in line with international obligations as flag, coastal, port and market states responsibilities (EU Commission 2019a). Since 2016, 7 non-EU countries have been pre-identified as non-cooperating in the fight against IUU fishing (yellow carded), 2 countries have been identified as non-cooperating (red carded) after failing to address their problems in tackling IUU fishing (ibid). For African, Pacific and countries in the Indian Ocean region, development funding is also provided to support the development and management of sustainable fisheries and this includes action to help increase capacity to combat IUU fishing.
- **SDG 14.5 conserve coastal and marine areas:** the EU has already designated more than 10% of its marine and coastal areas as MPAs. It is now assisting other countries to achieve the same target by investing in developing guidelines and setting up twinning projects, as well as projects supporting establishment and effective management of MPAs and their networks in biodiversity hotspots around the world
- **SDG 14.6 prohibit over-capacitating subsidies:** in October 2016, the EU tabled a proposal at the WTO to ban fisheries subsidies that contribute to overcapacity, overfishing or IUU fishing. However, a binding agreement was not reached and discussions have been postponed (EU Commission 2019a).
- **SDG 14.7 increase economic benefits to Small Island Developing States:** through the Pacific-European Union Marine Partnership Programme (PEUMP), the EU supports 15 Pacific states in the ACP group in sustainable management and the development of fisheries for food security and economic growth. A new Support Programme, SAMOA Pathway (SIDS Accelerated Modalities of Action), of EUR 35 million for ACP SIDS and Coastal Countries was also introduced in 2018. The programme is designed to support efforts to protect, manage and use marine and coastal biodiversity through targeted capacity building, strengthen knowledge-based decision-making, support grass-root pilot projects, and enhance the cooperation for environmental sustainability
- **SDG 14.A increase scientific knowledge and research:** the EU is actively working with its partners in the All Atlantic Ocean Research Alliance, the G7 initiative "Future of the Seas and Oceans", the Intergovernmental Oceanographic Commission and the Group on Earth Observations to improve ocean observations and data handling (EU Commission 2019a and 2019b). Under the All Atlantic Ocean Research Alliance, the Commission is also providing funding support for marine research and innovation to address challenges such as food security, polar research and climate variability (EU Commission 2019a and 2019b).The SFPA with third countries target surplus fish stock, and decisions on fishing opportunities are taken based on scientific analysis and advice. The implementation of SFPAs presents a learning experience for third countries in

sustainable fisheries management, and understanding the role and need of scientific knowledge and research.

- **SDG 14.C: enhance conservation and sustainable use of oceans:** ensuring sustainable use and management of marine resources is also one of the 4 key priority areas for the EU under the transition to a climate-neutral Europe, and is targeted indirectly under SDG14.4, 14.5 and 14.6. The EU is committed to supporting the establishment of the Partnership for Regional Ocean Governance (PROG) Marine Regions Forum, which is designed to promote integrated regional models on ocean governance for the conservation and sustainable use of marine ecosystems and resources. In addition, the Commission introduced measure to promote sustainable use of marine resources through its sustainable finance plan.

Based on the action points prescribed in the adopted a joint agenda on international ocean governance to safeguard the future of our oceans (EU Commission 2019a and 2019b), the assessed impacts on SDG14 targets are summarised in Table 9 below.

Table 9 Assessment of International Ocean Governance against SDG14 targets (own figure)

	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.a	14.b	14.c
International Ocean Governance	++	++	N	++	++	++	++	++	N	++

(++) direct and positive relation; (+) indirect positive relation; (N) neutral; (-) negative relation

Performance evaluation

International ocean governance by nature is difficult to measure as there are competing contributions made by various factors and shared commitments of other countries that result in changes to the marine ecosystems and resources, globally. Moreover, for many indicators of international ocean governance, the effect can be slow and gradual (e.g. fish stock recovery) and as such, the full extent of policy impacts cannot be seen within a short timeframe. Therefore, these limitations should be noted when considering the following evaluation.

Table 10 Evaluation criteria applied to the relation between SDG14 and international ocean governance

Criterion	Maritime Spatial Planning Directive
Effectiveness	The impact of EU actions in the context of international governance on achieving SDG 14 is most measurable for SDG 14.5, where the target of designating 10% of marine and coastal areas to MPAs is already achieved. Less measurable is the impact of reducing marine pollution from the EU Single-Use Plastics Directive and EPR for fishing gear, the latter to be implemented end of 2024. However, it is expected that the policies will contribute to the prevention of additional litter entering the marine space and lead to avoided emissions of 3.4 million tonnes of CO_2 equivalent (EU Commission 2018). The avoided emissions will also contribute to the growing pressures on ocean acidification. Other areas where concrete actions have been taken in meeting SDG 14 targets are supporting development of SIDS,

Criterion	Maritime Spatial Planning Directive
	where EUR 35 million have been committed to capacity building for Pacific States, and targeting IUU fishing under the EU dialogues with third countries, which until now has contributed to 15 countries successfully having reformed their control and management system in line with international obligations as flag, coastal, port and market states responsibilities (EU Commission 2019b). One area where actions of international governance was not successful is prohibiting over-capacitating subsidies, as a binding agreement at the WTO could not yet be reached.
Efficiency	The cost efficiency of this intervention is hard to assess. However, given its global and integrated scale and the wide success – especially in socio-economic benefits - it can be considered that the intervention is largely cost-efficient.
Coherence	There is considerable synergy between the EU's actions in international governance in targeting SDG 14 and its internal policies. For example, the international actions on IUU and over-capacitating subsidies are coherent with the Common Fisheries Policy, which seeks for the exploitation of fish stocks at sustainable levels and specifically outlines the eradication of IUU as one of its external policy objectives (Art. 28, EU Commission 2013). Similarly, the targeting of reducing and preventing marine pollution is in line with the EU's Directive on Single Use Plastic (EU Commission 2019c). This is reinforced in the Marine Strategy Framework Directive (MSFD), , which also aims to protect ecosystems and enhance conservation and sustainable use of marine resources alongside the Habitats and Birds Directives (EU Commission 2008). In general, the MSFD provides a holistic approach to ocean governance, aligning internal maritime policies with international actions. The MSFD spans across the SDG14 targets, from regulating fisheries management in accordance to CFP (incl. combating IUU), to conservation and impact mitigation measures under its qualitative descriptors for determining good environmental status. The latter provides links to Single Use Plastic, Birds and Habitats, and Maritime Spatial Planning directives.
Relevance	The actions taken by the EU in the context of international governance is very much relevant in supporting the realisation of SDG 14 targets at the global scale. For example, the push to prohibit over-capacitating subsidies is yet to be achieved and fighting IUU is an ongoing commitment in ensuring sustainable use of oceans.
EU Added value	In general, actions of the EU in the field of international ocean governance have been perceived by Member States as value adding in achieving SDG 14. The EU's initiative on communication on international ocean governance has been praised as one of the biggest contributions the EU makes to directly supporting SDG14 outside of the EU by Member States.

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Marine Strategy Framework Directive

Introduction

The Marine Strategy Framework Directive (MSFD) is designed to ensure a holistic approach to protect the marine environment of the seas around Europe while enabling sustainable use of the marine resources and ensuring continuation of its ecosystem services for the society. The necessity for such a holistic approach can be traced back to the Agenda 21, adopted at the 1992 UN Conference on the Environment and Development (Grip 2017), Johannesburg Plan of Implementation, adopted at the World Summit for Sustainable Development (2002) and the Future We Want, adopted at UN Conference on Sustainable Development in 2012. Directive 2008/56/EC of the European Parliament and the Council, establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive) was approved on June 17, 2008. The current consolidated version is of June 7, 2017. The main objective of the Directive is to establish a framework within which Member States shall take the necessary measures to achieve or maintain clean, healthy and productive seas.

For that purpose, the Member States shall develop and implement marine strategies, with the aim to (a) protect and preserve the marine environment, prevent its deterioration or restore marine ecosystems and (b) prevent and reduce inputs in the marine environment, with a view to phasing out pollution. The Member States shall apply an ecosystem-based approach to the management of human activities. Furthermore, the Directive shall contribute to coherence between, and aim to ensure the integration of environmental concerns.

The MSFD framework is, to a large extent, supported by other EU legal instruments, including the Water Framework Directive, Urban Water Treatment Directive, Birds and Habitats Directives, Common Fisheries Policy, the Maritime Spatial Planning Directive, the Strategic Environmental Assessment and Environmental Impact Assessment, Waste Framework Directive, EU Strategy for Plastics and the Single-Use Plastics Directive. The MSFD is also the environmental core piece of the EU's Integrated Maritime Policy. The MSFD has been in place since 2008 and since then the Commission assessed each step of the marine strategies being developed by Member States.,[lxxxv] The most recent report COM(2020) 256 final takes stock of the main achievements and major challenges of the first implementation cycle of MSFD.[lxxxvi]

The European Commission states that even though the quality status of Europe's seas portrays a mixed picture, MSFD has contributed to a better understanding of the pressures and impacts of human activities on the seas.

Overlooking the scientific literature on MSFD, it is noticeable that the MSFD has inspired numerous studies assessing the linkages between human activities and environmental impacts, either from a topical perspective, e.g. in relation to underwater noise (Codarin and Picciulin 2015), a regional perspective (Crise et al. 2015) or a methodological perspective (Borja et al. 2011).

Contribution to SDG14

The implementation of the MSFD Directive contribute to achieving the SDG14 targets, most clearly in relation to the environmental dimension of SDG14 and specific environmental targets of SDG 14:

- **SDG14.1 Reduce marine pollution:** Reduction of marine pollution is an explicit objective of MSFD. MSFD has led to deployment of monitoring programmes, among others for marine pollution (Baini et al. 2018). MSFD has directly contribute to identify levels of pollution and this knowledge has triggered the development of new policies. The MSFD has contributed directly to addressing both land-based sources of pollution (work on contaminants, eutrophication, including nutrient pollution and Marine Litter) and sea-based sources of pollution (Marine Litter, noise pollution, pollution from offshore activities). At the same time, the EU Member States work also on Programmes of Measures, as required by the Directive, to address the pressures from pollution and improve the status of the marine environment. The work on descriptor 10 – Marine Litter, launched a specific initiative in the EU to address single use plastic (SUP) by identifying the 10 most commonly found items of marine litter at the beaches around the EU.
- **SDG14.2 Manage and protect ecosystems:** the MSFD is a direct response to the sustainable development objective of holistic approach to oceans, which can be traced backed all the way to the Agenda 21 (1992), preceding the adoption of Agenda 2030 and Sustainable Development Goals in 2015. MSFD is the single most-important policy instrument in place to achieve SDG14.2 through its ecosystem-based approach. [lxxxvii] This is emphasized by similar temporal scopes of MSFD and SDG14.2, both of which set out to reach the objective of managing and protecting marine ecosystems by 2020. The MSFD requires EU Member States to work regionally, and its implementation is thus supported through the work of the Regional Sea Conventions, which in turn applying an ecosystem based approach strive for equivalent or similar objectives (Good environmental status). MSFD links SDG 14.1 with SDG 14.2; the MS strategies to pollution and other issues (such as commercial fisheries or non-indigenous species) feed into their assessment and management measures for biodiversity and marine ecosystem protection. Monitoring and assessment performed under the MSFD has increased understanding of the marine ecosystems and habitats and for example contributed to formulation and adoption of new policy measures outside the marine realm (e.g. the EU strategy for plastics and the circular economy action plan).[lxxxviii]
- **SDG14.4 and SDG14.7:** The MSFD requires fishing activity to be managed so that conservation objectives for the broader marine ecosystem might be achieved (see descriptor 3). The CFP and the MSFD together require Member States to keep 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.
- **SDG14.5 Conserve coastal and marine areas:** Area-based conservation management plays an important role in reaching SDG targets, including SDG14.5 (Diz et al. 2018). The conservation of coastal ecosystems is addressed to designated nature areas and examination of land-sea interaction, typically occurring in those coastal areas. MSFD requires MS to include spatial protection measures, including in particular Marine Protected Areas (MPAs), in their programmes of measures. The Commission also

published the Report on progress in establishing MPAs (as required in Article 21 of MSFD) in 2015, which contributed to raising the efforts on establishment of MPAs and EU achieving this objective before the deadline.

- **SDG14.A Increase scientific knowledge, research and technology for ocean health:** MSFD required Member States to make an initial assessment of the environmental status, determine Good Environmental Status and establish national targets and indicators. MSFD has inspired research into the relation between human activities and the quality of the sea. It has triggered applied research initiatives, among others into topics that were poorly understood such as marine litter and underwater noise.

In a more indirect manner, MSFD can contribute to achieving:

- **SDG14.3 minimise and address the impacts of ocean acidification:** while MSFD does not address the cause of ocean acidification (i.e. CO2 emissions), its focus on clean, healthy and productive seas can contribute to climate mitigation and adaptation. Healthy and resilient marine ecosystems play a significant role in carbon sequestration and are likely to be more able to adapt to changing ocean conditions. Such interlinkages are not well understood and need to be looked at in the future.
- **SDG14.C: Implement and enforce international sea law**: The MSFD does recognize regional cooperation between Member States is important to reach its objectives (See Article 6). The Directive incorporates the UNCLOS requirement to observe and measure the risks or effects of pollution on EU marine waters, UNCLOS provisions on sustainable fisheries and aquaculture, on innovation and investment in research.

Table 11 Relation between MSFD and SDG14 (own figure)

	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.a	14.b	14.c
MSFD	++	++	+	++	++	n.a.	++	++	N	+

(++) direct and positive relation; (+) indirect positive relation; (N) neutral; (-) negative relation (n.a.) not applicable

Performance evaluation

An evaluation of the MSFD, even if generic, is not within the scope of this project and we refer to scientific publications and reports published, including COM(2020) 256 final.lxxxix The performance evaluation below focusses on the question how MSFD contributes to achieving the SDG14 targets.

The MSFD is a key instrument for the EU to deliver on its global commitments to protect the marine environment and a key pillar for a sustainable approach to ocean management.6 The interviewees acknowledge that MSFD takes a more holistic and ecosystem-based approach than previous policy tools, and covers many of the SDG14 topics, except for ocean acidification. There is praise for the Directive: "we can be satisfied that we have MSFD in place since 2008 as the instrument that can address the human

impact in a holistic way", it is seen as a very innovative instrument, not present in other countries.

Table 12 Evaluation criteria applied to the relation between SDG14 and MSFD

Criterion	Marine Strategy Framework Directive
Effectiveness	The MSFD was launched to ensure the holistic approach to oceans. Therefore, it can play a pivotal role in reaching the SDG14 targets based on its ecosystem-approach. A coherent approach is developed under MSFD, to data-collection, monitoring, assessments, by applying criteria and methodological standards that MS have to look at. MSFD has contributed to better understanding of the marine ecosystem and to its improvements. The adaptive management approach of this policy allows for policy adjustments needed.
Efficiency	Some interviewees raised the point that a lot of finance is needed for implementation of MFSD. There were contributions from EMFF which was very important; other EU funding like LIFE; and general regional funds that can be used for implementation of policies. Furthermore, it is said that it takes considerable time to put in place the monitoring machine related to the MSFD. Although both arguments could relate to efficiency, these are not sufficient evidence to draw conclusions can be drawn on the efficiency of MSFD in reaching SDG14 targets. The important parameter to consider here would also be the cost of inaction. Therefore, the efficiency should be assessed taking into account the benefits of MSFD, including improved status of the seas, new knowledge on the marine ecosystem and contribution to development of new policy initiatives.
Coherence	The interlinkages between MSFD and other European legal instruments (such as CFP) are well recognized (see above). The European countries will need to better integrate and coordinate their actions in marine conservation and management of the human and economic activities at the seas, including their cumulative pressures in the second cycle of the MSFD, in order to achieve its final goal of clean, healthy and productive seas as well as the objectives of other environmental policies (Cavallo et al. 2019). MSFD has contributed to achieve coherence in regional and national approaches as it prescribes a uniform framework to be applied and coordinated with the regional settings. Thereby, MSFD gives an important example of governance underpinning the policy implementation.
Relevance	The analysis above points to the clear linkages between the implementation of MSFD and achievement of the SDG14 targets. MSFD establishes a holistic approach to managing and protection marine ecosystems.

Criterion	Marine Strategy Framework Directive
EU Added value	MSFD prescribes a common framework to assess the marine ecosystem quality, define policy measures and data-collection for monitoring progress. The added value of an EU wide approach lies in: creating a framework for a holistic approach to oceans and seas by applying ecosystem approach and addressing cumulative pressures on marine environment; creating a uniform knowledge base on the marine environment, as a prerequisite for the assessment of the status, health and productivity of marine ecosystems; enabling relevant policy adaptations to achieve the set goals; and enabling and strengthening regional cooperation in achieving the objectives of MSFD and thus, of relevant SDG 14 targets.

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Maritime Spatial Planning Directive

Introduction

Directive 2014/89/EU of the European Parliament and the Council, establishing a framework for maritime spatial planning, was approved in July 23, 2014. The main objectives of the Directive are:

- To ensure that when establishing and implementing marine spatial planning, the Member States consider economic, social and environmental aspects to support sustainable development and growth in the maritime sector, applying an ecosystem based approach;
- To promote the coexistence of relevant activities and uses;
- To contribute to the sustainable development of energy sectors at sea, of maritime transport, and of the fisheries and aquaculture sectors, and to the preservation, protection and improvement of the environment, including resilience to climate change impacts. In addition, Member States may pursue other objectives such as the promotion of sustainable tourism and the sustainable extraction of raw materials.
- Maritime Spatial Planning (MSP) is an important policy tool for sustainable development of marine areas and coastal regions, in combination with the Marine Strategy Framework Directive (MSFD) and other environmental policy tools for restoration of Europe's seas to environmental health. The high and rapidly increasing demand for maritime space for different purposes, such as installations for production of energy from renewable sources, oil and gas exploration and exploitation, shipping and fishing activities, ecosystem and biodiversity conservation, the extraction of raw materials, tourism, aquaculture installations and underwater cultural heritage, as well as the multiple and cumulative pressures on coastal resources, require an integrated planning and management approach.

Contribution to SDG14

The intricate linkages between MSP and achievement of the SDG14 objectives are recognized Ntona and Morgera (2018) conceptualise the relations between SDG14 and other goals, relying on the emergent guidance for MSP under the Convention of Biological Diversity . Diz et al. (2018) argue that using MSP to designate marine protected areas can contribute to a more systemic and comprehensive implementation of SDG14.5.

The implementation of the MSP Directive can contribute to achieving the SDG14 targets, most clearly in relation to:

- SDG14.2 manage and protect ecosystems: evaluation of the environmental and ecological impacts of the planned human activities is a key component in Marine Spatial Planning. Strategic Environmental Assessment are undertaken to assess the impact of human activities (see e.g. the work by the Baltic Marine Environment Protection Commission HELCOM) . Ecosystem based approaches to MSP are applied and further developed (Kyvelou and Ierapetritis 2019)

- SDG14.5 Conserve coastal and marine areas: Area-based conservation management plays an important role in reaching SDG targets, including SDG14.5 (Diz et al. 2018). The conservation of coastal ecosystem is addressed to designated nature areas and examination of land-sea interaction, typically occurring in those coastal areas.
- SDG14.7 increase economic benefits to Small Island Developing States (SIDS): Extreme weather and climate change are direct threats to the livelihood and economy of SIDS. Near-shore mangroves, seagrasses and reefs can provide the protection against storm surges needed but are under threat by competing activities. Designating near-shore activities as Marine Protected Area (MPA) through MSP, can support the development of such natural coastal protection structures (Wilson and Forsyth 2018).

In a more indirect manner, MSP can contribute to achieving:

- SDG14.1 reduce and prevent pollution: Although pollution control is not a direct objective of MSP, the environmental impact of marine sectors (such as aquaculture, offshore energy, et cetera) on the sea does determine the space to be allocated to those activities (see SDG14.2 and SDG14.5) keeping in mind the objectives of MSFD of reaching clean, healthy and productive seas based on ecosystem approach.. Growth of these sectors often requires a reduction in pollution.
- SDG14.3 minimise and address the impacts of ocean acidification: a proper functioning framework for MSP can also help to spur the transition to renewable energy by enabling the deployment of renewable offshore energy technologies. Such a transition would reduce global CO2 emissions and contribute to combat ocean acidification.

Table 13 Relation between MSP Directive and SDG14 (own figure)

	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.a	14.b	14.c
Maritime Spatial Planning	+	++	+	N	++	N	++	N	N	N

(++) direct and positive relation; (+) indirect positive relation; (N) neutral; (-) negative relation

A concrete example of how Marine Spatial Planning can advance the management and protection of ecosystems (SDG14.2) is Latvia. As required by the EU's MSP Directive, Latvia took an ecosystem-based approach to Marine Spatial Planning by (1) Analysing best knowledge and practice and identification of ecosystem services, 2) Finding alternative developments to assess impacts on marine ecosystems, and 3) Applying precaution and mitigation when using an impact matrix. By means of this approach, the spatial assessment of impacts on the ecosystem, and its defining characteristics, is structurally brought into the planning process, contributing tco better protection of that ecosystem.

Performance evaluation

By 2020, multiple Member States have developed maritime spatial plans and an extensive body of literature exist on pertinent topics such as implementation of MSP, cross-border cooperation, land-sea interactions and environmental and socio-economic impact assessment of MSP . International initiatives to develop and implement Marine Spatial Planning are undertaken by countries and international organisations, such as UNESCO-

IOC. The policy mapping exercise conducted in this project confirms that Maritime Spatial Planning and SDG14 are linked (with 58 policy documents identified that mention MSP in title and/or description).

Applying the Better Regulation criteria to the relationships between SDG14 and Marine Spatial Planning Directive should be done with caution. It is important to realize that the Directive 2014/89/EU was not established for achieving SDG14 targets.

Table 14 Evaluation criteria applied to the relation between SDG14 and Directive 2014/89/EU

Criterion	Maritime Spatial Planning Directive
Effectiveness	Achievement of SDG14 goals is not an explicit objective of the Marine Spatial Planning Directive. Yet, the process of Marine Spatial Planning does require Member States to take an integral, ecosystem-based approach to marine development. This can contribute to achieving multiple SDG14 targets.
Efficiency	Different options have been considered to ensure a coherent approach to the sustainable development of the Member States' uses of marine waters and coastal zones, in accordance with the ecosystem approach. The eventual approach anchored in the MSP Directive has been assessed ex-ante as bringing benefits that outweigh the cost (Policy Research Corporation, 2010). It can thus be considered an efficient way to contributing to SDG14 targets.
Coherence	The Maritime Spatial Planning Directive explicitly accommodates other EU Directives, to secure coherence with those Directives. The ecosystem-based approach, as referred to in the Marine Strategy Framework Directive, is promoted to ensure activities are planned within the limits of the ecosystem.
Relevance	The Marine Spatial Planning Directive is relevant in the context of SDG14. It influences further development of new and growing Blue Economy and Blue Growth sectors. The extent and scope of such activities co-determines achievement of SDG14 targets.
EU Added value	The interviewees report that the development and implementation of the MSP Directive has supported the implementation of maritime spatial plans in the EU and various regions outside the EU. Thereby, the MSP Directive may have had a positive impact on Life Below Water in non-EU countries.

Multiple developments related to the MSP Directive are taking place, that could increase the impact of the MSP Directive on achievement of SDG14 targets:

- Achieving a greater positive impact on managing the marine areas through an integrated, ecosystem-based management (Ansong, Gissi and Calado 2017)
- The European Union supports the further implementation of the MSP Directive in the European seas through the Assistance Mechanism "European MSP-platform" and the funding of cross-border cooperation projects in Maritime Spatial Planning
- The European Union, among others, seeks to improve the performance of MSP through development of tailored evaluation methodologies

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SDG14 Governance

Introduction

Different definitions for the term "governance" exist and the meaning of the term "governance" is therefore interpreted in different ways. In our understanding, governance is defined as "how society or groups within it, organize decision-making processes". SDG14 governance then refers to the way in which "SDG14 related" policies are implemented and conceptualized, and it potentially has great influence on the performance of those policies.

Sustainable Development Goals and targets are included in the 2030 Agenda for Sustainable Development. Like the other SDG's and targets, SDG14 and its corresponding targets are integrated and indivisible, global in nature and universally applicable. Targets are defined as aspirational and global, with each member state setting its own national targets guided by the global level of ambition but considering national circumstances. Each Government will also decide how these aspirational and global targets should be incorporated into national planning processes, policies and strategies (United Nations, 2015).

Several policies – captured under the umbrella marine governance – are relevant. Oceans are highly dynamic and interconnected and ocean affairs including conservation and sustainable resource use are usually cross-border and often cross-sectoral issues that need to be managed and regulated through coordination and collaboration in order to be effective. This in-depth assessment takes a transversal look at how governance has influenced progress on SDG14 and its targets so far. Some classical themes pertaining to governance, and also relevant for marine governance at the EU level, are legitimacy (Piwowarczyk et al. 2019; Piwowarczyk and Wróbel 2016), regionalization (Soma, van Tatenhove, and van Leeuwen 2015; Wright et al., 2017; Mahon and Fanning, 2019) and integration (Morf et al. 2019).

Contribution to SDG14

There clearly is a relationship between governance for SDG14 is shaped and the achievements in realising the different targets (see Table 17).

- SDG14.1 Reduce and prevent pollution by 2025
- SDG14.2 Manage and protect ecosystems by 2020
- SDG14.3 Minimise and address the impacts of ocean acidification
- SDG 14.4 Effectively regulate harvesting and end overfishing and IUU by 2020
- SDG14.5 Conserve at least 10% of coastal and marine areas by 2020
- SDG 14.6 Eliminate subsidies that contribute to overfishing and IUU fishing by 2020
- SDG14.7 Increase economic benefits to Small Island Developing States (SIDS) by 2030
- SDG 14.a Increase scientific knowledge, develop research capacity and transfer marine
- technology

- SDG 14.b Provide access for small-scale artisanal fishers to marine resources and markets
- SDG 14.c Enhance ocean conservation and sustainable use by implementing international law

Table 15 Relation between SDG14 Governance and SDG14 (own figure)

	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.a	14.b	14.c
SDG14 governance	++	++	++	++	++	++	++	++	++	++

(++) direct and positive relation; (+) indirect positive relation; (N) neutral; (-) negative relation

Performance evaluation

SDG14 governance was discussed in the interviews, with the following main observations to be made. There are many EU institutions and bodies that work on achieving the SDG14 targets and it is observed that multiple entities deal with the same topic from different angles. The interviewees indicate that at times there are so many entities that it is relatively hard to navigate between all those groups and mechanisms, e.g. all sea basin strategies, expert groups, council configurations, and all the meetings on Member State and EU level.

There are examples of integrated policy making, bringing together multiple objectives, sectors and geographies under one umbrella such as the International Ocean Governance agenda[xc] which is an integral part of the EU's response to the 2030 Agenda and the Marine Strategy Framework Directive (MSFD)[xci]. An overarching maritime strategy, doctrine and/or whitepaper on SDG14 bringing domestic and international ocean affairs together is currently lacking; there are various sectoral policies. The link between land and sea is currently given insufficient attention, although it is explicitly mentioned in the Maritime Spatial Planning Directive. The topic of pollution transcends the sea basin strategies, including topics such as transport, naval shipbuilding, navy, and coastal/river basin management must be considered as well. The interviewees indicate that there is a need for an overarching strategy for Europe (including aspects like objectives and funding).

The respondents indicate that the EU should have more internal coordination between the different policy fields and Directorates-Generals. For example, fisheries cannot just be fisheries but also needs to be linked to others, e.g. trade, labour, and health. Table 18 provides an assessment of SDG14 governance based on responses during interviews.

Table 16 Evaluation criteria applied to SDG14 governance

Criterion	SDG14 Governance
Effectiveness	In order to illustrate the effectiveness in delivering SDG14, SDG14.1 performance is identified as example. The EU has done well in reducing point sources of pollution. However, it is more diffuse pollution which requires a transformation of sector polices. Even though policy seems to move into the right direction (e.g. circular economy approach), the interviewees clearly indicate *"that we are not there yet"*.

Criterion	SDG14 Governance
	The large number of entities that deal with the topic from different angles make it very challenging and reduces effectiveness. The interviewees indicate that simplification would help.
Efficiency	No data was provided on the efficiency of SDG14 implementation
Coherence	Many mechanisms are in place, but the governance framework is characterised by a fragmented approach which makes it difficult to implement a holistic approach like the Agenda 2030. A more holistic approach is needed. Between different ocean-related policy tools there is not enough coherence, e.g. fisheries and Marine Protected Areas (MPA). Not enough linkages are made between different ocean-related and land-based policy fields and policy tools. For example, the Common Agricultural Policy (CAP) does not sufficiently link to the oceans on how to achieve good environmental status under the Marine Strategy Framework Directive (MSFD).
Relevance	There is no discussion on the relevance on SDG14 governance.
EU Added value	The results of the interviews show that we cannot look on EU at its own but need to look at the different regions as well. The advice is to work with regional fish and governance organisations. Regional measures taken also contribute to the achievement of the targets. In addition, to improve policy coherence among EU, it is needed to establish interlinkages between EU and regions. This is already partly done through MSFD. This links to ongoing debates on regionalisation in marine governance (see above).

Recommendations

- The comments made above point to the need for an integrated approach to SDG14 governance. The great diversity of actors (including DG's), competences, policies, and stakeholders involved in different elements of SDG14 governance makes it difficult to develop a coherent approach, considering the different needs.
- According to the interviewees, policy coherence for sustainable development needs to be raised and considered - i.e. the other policy drivers which are hindering achievement of the SDG14 targets and which are outside direct competence (e.g. the impact of agriculture policy with fertilizer runoff causing eutrophication). This is the reason why the Worldwide Fund is calling for an EU SDG implementation strategy (including SDG 14) which brings coherence between the different strands being worked on by the Commission.

- SDGs need to be looked at comprehensively and not just individually (see indivisible nature of the 2030 Agenda). Some of the solutions which could be put forward by an EU SDG implementation strategy are, for instance, revising impact assessment rules so sustainability is better considered across relevant policies, ensuring there is intra Directorate-General dialogue and coordination sufficiently early in the policy-making process.
- Technological innovation and changing societal trends also require an adaptive policy framework flexible enough to ensure timely response to emerging challenges. For example, the growing need for elements and resources for the energy transition emphasize the need for seabed mining posing an emerging challenge to sustainable use of marine resources. Such issues must be incorporated in a policy framework. Important elements for successful implementation of policies include evaluation and monitoring, conflict resolution and priority setting.

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[5] I.e. ++ for policies that specifically aim at achieving the objective of the SDG target; + for policies that broadly aim at achieving the objective of the SDG target; and – for policies that have a potential negative impact on the achievement of the SDG target.

[6] I.e. ++ for policies that specifically aim at achieving the objective of the SDG target; + for policies that broadly aim at achieving the objective of the SDG target; and – for policies that have a potential negative impact on the achievement of the SDG target.

[7] EMFF, foreign policy instrument, development cooperation instrument, LIFE programme, 7th Environmental Action Programme, maritime spatial planning directive, and others).

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[lxxiv] European Structural and Investment Funds (ESIF) include the European Maritime and Fisheries Fund (EMFF), European Fund for Regional Development (ERDF), European Social Fund (ESF) and the Cohesion Fund (CF).

[lxxv] Based on interviews, Soma et al. (2018) and feedback from DG MARE

[lxxvi] Currently environmental monitoring projects are in place, but preferably environmental monitoring programs should be developed to assess these potential adverse impacts of innovative maritime activities.

[lxxvii] The EU plays an active role in 6 tuna RFMOs and 11 non-tuna RFMOs.

[lxxviii] The EC (2020a) gives a detailed overview of which policies and actions (including the CFP and its different components) contribute to achieving SDG 14. Where there is (almost) full agreement between the SDG and the CFP, the scoring is '++'; where there is partial agreement between the SDG and the CFP, the scoring is '+'.

[lxxix] The reform of the CFP of 2013 aims at gradually eliminating the wasteful practice of discarding through the introduction of the landing obligation (https://ec.europa.eu/fisheries/cfp/fishing_rules/discards_en).

[lxxx] The landing obligation requires all catches of regulated commercial species on-board to be landed and counted against quota (https://ec.europa.eu/fisheries/cfp/fishing_rules/discards_en).

[lxxxi] The CFP should contribute to the protection of the marine environment, to the sustainable management of all commercially exploited species, and in particular to the achievement of good environmental status by 2020, as set out in Article 1(1) of Directive 2008/56/EC (EC, 2013).

[lxxxii] Almost all important stocks and fisheries are managed by means of multiannual plans (MAP), which contain goals for fish stock management, expressed in terms of fishing mortality and/or targeted stock size (see https://ec.europa.eu/fisheries/cfp/fishing_rules/multi_annual_plans).

[lxxxiii] https://ec.europa.eu/fisheries/cfp/emff_en

[lxxxiv] https://ec.europa.eu/fisheries/cfp/eff/farnet_en

[lxxxv] COM(2014)96 final; COM(2017)3 final; COM(2018)562 final

[lxxxvi] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1593613439738&uri=CELEX:52020DC0259

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[xc] The International Ocean Governance Agenda aims to ensure our oceans are safe, secure, clean and sustainably managed.

[xci] The Marine Strategy Framework Directive aims to achieve Good Environmental Status of the EU's marine waters by 2020 and to protect the resource base upon which marine-related economic and social activities depend.

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