

21 February 2017

***European Union and its Member States contribution for the 2017
United Nations Informal Consultative Process on Oceans and the
Law of the Sea***

'The effects of climate change on oceans'

European Union

Oceans play an important role in the climate system by absorbing a significant part of the global greenhouse gas emissions, and at the same time are home to some ecosystems that are a source of food and livelihoods for innumerable coastal communities but which are extremely vulnerable to climate change and ocean acidification. The EU and its MSs are fully supportive of furthering the understanding of the important relationship between climate and the ocean and the need to protect the ocean's resilience to adapt to climate change, including through the establishment of marine protected areas and other area-based management tool. We recognize that it is of utmost importance to understand the multiple impacts of different stressors on the ocean including ocean warming, acidification, overfishing, oxygen depletion, pollution and eutrophication, to enhance targeted research on the nexus between climate change and oceans, to communicate and share scientific findings, including through capacity building and also to understand and address how the management of human activities can be improved to tackle/redress these effects. The EU and its Member States invest considerable amounts in the research on oceans and climate change and look forward to the Intergovernmental Panel on Climate Change Special Report on Oceans and Cryosphere.

In the same vein, the European Commission and the EU's High Representative set out a joint agenda for the future of our oceans, proposing actions for safe, secure, clean and sustainably managed oceans in Europe and around the world. Actions of particular note include; 1. Filling the gaps in the international ocean governance framework; 6. Implementing the COP21 Agreement and mitigating the harmful impact of climate change on oceans, coastlines and ecosystems; 11. Achieving the global target of conserving 10% of marine and coastal areas and promoting the effective management of MPAs; 12. A coherent EU strategy on ocean observation, data and marine accounting.

Through its research programme Horizon 2020 , the COPERNICUS service, and its contribution to the international GEO initiative (Group on Earth Observation) the EU is collecting data on oceans and contributing to improving ocean observations that are relevant to monitor and forecast climate change and its impact, notably the effects of climate change on the oceans and its resources, resilience to climate change and on understanding past climates. One major contribution made through the Horizon 2020 Research and Innovation Programme to climate related ocean observations is through the ATLANTOS project for which the EU has invested more than 20 M€.

Other Horizon 2020-funded projects include INTAROS which extends the observations collected through ATLANTOS to the Arctic Ocean. Regarding the impact of climate change on fisheries and aquaculture, there are also other Horizon 2020 funded projects (CERES and ClimeFish) which address the threats and opportunities that the aquatic primary production sector is facing and develop adaptation strategies. Climate-related marine research has also been central under the Seventh

Framework Programme for research and technological development with several projects such as MEDSEA, VECTORS and MEECE addressing issues such as the effects of climate change on marine ecosystems and human activities in the Mediterranean Sea, the Atlantic Ocean, the Baltic Sea and the Black Sea.

Additional information with regard to specific research projects referred above:

- AtlantOS (<https://www.atlantos-h2020.eu/>) aims to deliver an advanced framework for the development of an integrated, fit-for-purpose Atlantic Ocean Observing System that goes beyond the state-of-the-art, leaving a legacy of sustainability after the life of the project. The consortium consists of 62 partners from 13 EU Member States, Canada, Brazil, United States, Faroe Islands, South Africa, and Iceland as a Third Party. The European Commission contributes with €20,652,921.00.
- The overall objective of INTAROS (http://cordis.europa.eu/project/rcn/205992_en.html) is to develop an integrated Arctic Observation System (iAOS) by extending, improving and unifying existing systems in the different regions of the Arctic. INTAROS will have a strong multidisciplinary focus, with tools for integration of data from atmosphere, ocean, cryosphere and terrestrial sciences, provided by institutions in Europe, North America and Asia

The consortium consists of 41 partners from 12 EU Member States, Norway, Greenland, Russia, United States, Canada and China. The European Commission contributes with 15,490,066.78.

- The objective of CERES (<http://ceresproject.eu>) was to advance a cause-and-effect understanding of how climate change will influence Europe's most important fish and shellfish resources and the economic activities depending on them. It will provide tools and develop adaptive strategies allowing fisheries and aquaculture sectors and their governance to prepare for adverse changes or future benefits of climate change. The consortium consists of 26 partners from 14 EU Members States and Turkey. The European Commission contributes with €5,586,851.25.
- The overall goal of ClimeFish (<http://climefish.eu/>) is to help ensure that the increase in seafood production comes in areas and for species where there is a potential for sustainable growth, given the expected developments in climate, thus contributing to robust employment and sustainable development of rural and coastal communities. The consortium consists of 21 institutes from 11 EU Member States, Norway, Faroes Islands, Canada, Chile and Vietnam. The European Commission contributes with €5,000,000.
- MedSea (<http://medsea-project.eu/>) assessed uncertainties, risks and thresholds related to Mediterranean acidification at organismal, ecosystem and economical scales. The project conveyed the acquired scientific knowledge to a wider audience of reference users, while suggesting policy measures for adaptation and mitigation that vary from one region to another. The consortium consisted of 16 partners from 6 EU Member States, Israel, Morocco, Egypt and Tunisia. The project received €3,490,169.35 in EC financial contribution.
- VECTORS (<http://www.marine-vectors.eu/>) was an integrated, multidisciplinary, large-scale project which aimed to improve our understanding of how environmental man-made factors

are impacting marine ecosystems now and how they will do so in the future. VECTORS has examined how these changes may affect the range of goods and services provided by the oceans, the ensuing socio-economic impacts and some of the measures that could be developed to reduce or adapt to these changes. The consortium consisted of 37 partners from 15 EU Members States and Israel. The European Commission contributed with €12,484,835 euros.

- MEECE (<http://www.meece.eu/>) used a combination of data synthesis, numerical simulation and targeted experimentation to further our knowledge of how marine ecosystems will respond to combinations of multiple climate change and anthropogenic drivers. The consortium consisted of 22 partners from 8 EU Member States, Norway, Turkey and South Africa. The project has received €6,499,744.74 in EC financial contribution.

Estonia

(iii) fostering climate-resilient sustainable development of oceans and seas and (iv) development of ocean-based mitigation measures and adaptation policies and strategies

Estonia has adopted the Policy action for Climate Change 2017 – 2030 <http://www.envir.ee/et/eesmargid-tegevused/kliima/kliimamuutustega-kohanemise-arengukava>. It takes into consideration the urgent actions addressing the resilience of marine ecosystems. It considers the most important actions to be (i) increasing public awareness of the status of water bodies and the accessibility of the data concerning the water quality; and (ii) avoid reduction of habitats' sustainability which may compromise biodiversity and ecosystem resilience. 30% of Estonian territorial sea is under protection to ensure the sustainability of marine ecosystems under its jurisdiction. We see it as a valuable contribution.

(v) capacity-building, partnerships and financing mechanisms for the implementation of such action

Estonia is committed to fight against global climate change, focusing especially on the situation in the least developed countries and the small island developing states.

Among other cooperation activities, Estonia has supported climate change mitigation and adaptation oriented projects carried out in the Pacific Small Island Developing States.

At the COP 21 United Nations climate change conference in Paris a number of climate funding announcements were made by developed countries, including Estonia. Estonia pledged to contribute EUR 1 million annually until the year 2020 for financing international climate cooperation by supporting environmentally sustainable development of partner countries, through contributing to bilateral projects and multilateral organisations and regional funds. The main focus is planned to be on mitigation to climate change and adapting to it, for example by supporting renewable energy sources, energy efficiency or transport and industry efficiency projects, as well as by strengthening administrative capacity regarding climate action or supporting solutions of adapting to climate change. From the pledged sum Estonia has already contributed EUR 1 million to Green Climate Fund in 2015-2016. The rest has been and will be directed to developing countries via bi- or multilateral channels under bi- or multilateral agreements. However, depending on the nature and content of specific frameworks and activities, the possibility to also contribute limited amounts via multilateral channels in the future is not excluded in principle.

To date, funding from private sector has been mobilized into domestic climate related activities – rather than climate cooperation. Estonia is looking into the possibilities of also involving the private sector in financing climate cooperation with developing countries. For this we are planning to initiate a feasibility study to identify Estonia's cleantech and green growth sectors with the biggest export potential, where the interest of private sector actors to participate in cooperation efforts would consequently also be higher.

France

Résumé : la prise en compte des océans dans le changement climatique, à l'occasion de la Conférence Paris Climat 2015, a permis d'inscrire durablement sur l'agenda politique international les enjeux de la gestion des océans et de la biodiversité marine comme défis majeurs du changement climatique. L'« *Alliance des initiatives océan et climat* » confortera les actions concrètes menées dans ce domaine par les partenariats.

Océans et action climatique.

Sous l'impulsion de la France, pour la première fois les océans sont devenus un sujet transversal majeur du climat à l'occasion de la 21^e conférence des Parties à la convention cadre des Nations Unies sur le changement climatique (COP21) qui s'est tenue à Paris du 29 novembre au 13 décembre 2015.

Les océans ont été pleinement pris en compte dans les négociations officielles, ont été inscrit dans le contenu de l'Accord de Paris, et ont donné lieu à la création de nombreuses alliances et partenariats dédiés. Plus de 30 événements et 7 stands ont été consacrés à la thématique « Mers et Océans », et les questions marines et maritimes ont été traitées dans plus de 70 événements. L'environnement marin a été mis en valeur à travers deux journées thématiques, et son inscription dans l'Agenda de l'action a permis de mobiliser la communauté internationale sur l'importance des océans dans la lutte contre le changement climatique.

La présentation de l'initiative « *Because the Ocean* » et la signature en novembre 2015 par 22 États, dont la France, de la déclaration dédiée, ont constitué un événement de haut niveau en amont de la COP21. Lors de la « *Semaine de l'Action* », au cœur de la zone des négociations, un segment de haut niveau le 2 décembre 2015 à l'initiative de la France et intitulé « *L'Océan est une solution pour le Climat* », a pour la première fois engagé la communauté internationale dans une démarche partenariale orientée vers l'action. Les journées des 3 et 4 décembre 2015 ont réuni respectivement un Forum destiné aux représentants de la société civile et un « *Ocean Day at COP21* » avec la participation de décideurs politiques mondiaux.

Les acteurs publics et privés ont ainsi démontré à de nombreuses occasions, pendant la COP21, la force et la diversité de leurs engagements pour protéger les océans et lui redonner son plein rôle climatique. Ces efforts collectifs se poursuivent et prennent de l'ampleur, avec le soutien de la France et de ses partenaires. Des initiatives et engagements pris lors de la COP21 ont d'ores et déjà été couronnés de succès, voire amplifiés.

Océans et actions au niveau multilatéral et régional.

Le Groupe inter-gouvernemental d'experts sur le climat (GIEC – IPCC en anglais) a inscrit en avril 2016 dans son programme de travail la réalisation d'un **rapport sur les océans**.

La France s'était fortement engagée, aux côtés des signataires de l'initiative « *Because the Ocean* », en faveur de cette décision. Le « *Rapport spécial du GIEC Changement climatique et océans et cryosphère* » synthétisera l'ensemble des connaissances scientifiques actuelles sur la plupart des aspects relatifs aux interactions entre le climat et les océans. Ce sera le cas notamment de la hausse du niveau des mers et de l'acidification, avec ses impacts potentiels sur les écosystèmes marins et les ressources alimentaires mondiales. Il est prévu que ce rapport pionnier soit approuvé puis publié en 2019.

La France mobilisera très fortement ses océanographes, ses glaciologues, ses climatologues et l'ensemble de sa communauté scientifique pour qu'ils contribuent efficacement à toutes les phases d'élaboration de ce rapport spécial. Les scientifiques, notamment dans le cadre du projet TARA-Océans soutenu financièrement par la France, élargissent chaque jour l'échantillonnage des écosystèmes marins de la planète. La goélette scientifique « *Tara* », qui a initié en mai 2016 une nouvelle campagne de mesures, d'information du public et de sensibilisation des populations locales, sillonnera pendant deux ans sur près de 100 000 km l'océan Pacifique.

Avec dix autres États, elle soutient à l'Organisation maritime internationale (OMI) la réduction des émissions de gaz à effet de serre dans les transports maritimes. Ainsi, elle a encouragé l'approbation d'un système mondial de suivi des émissions de gaz à effet de serre des navires et d'une politique et d'objectifs de réduction des émissions des gaz à effet de serre de l'OMI.

Tout au long de 2016, la Présidente de la COP21 Climat a continué d'impulser une dynamique forte à l'agenda de l'action océan-climat :

- L'initiative *West African Coastal Adaptation (WACA)*, visant à lutter contre le risque côtier sur les littoraux du Golfe de Guinée, a été lancée par la Banque mondiale avec le soutien de la France et d'autres partenaires. À l'occasion d'un événement de haut niveau sur les océans le 21 avril 2016 qu'elle a organisé à New York pour conforter la mobilisation internationale en faveur de l'Océan, la France a signé un Mémoire d'entente avec la Banque mondiale et décidé depuis de l'octroi de nouveaux financements à cette initiative.

- La France poursuit également son soutien à l'initiative *CREWS (Climate Risk and Early Warning System)* lancée avec le Bureau des Nations Unies pour la réduction des risques de catastrophes, la Facilité mondiale pour la prévention des catastrophes et le relèvement gérée par la Banque mondiale, et l'Organisation météorologique mondiale, pour donner à tous les territoires menacés par la hausse du niveau des mers et les risques de submersion un système d'alerte précoce. L'initiative CREWS, qui fait partie des initiatives phares de la COP 21 en matière d'adaptation et de résilience, est soutenue par le G7. Elle a tenu en septembre 2016 son premier comité de pilotage, et les cinq premiers projets ont été validés en novembre 2016.

- Après la démarche « *Petites Îles de Méditerranée* », la France a lancé en 2016 une nouvelle initiative « *Initiative internationale en faveur des îles durables* », qui vise à conforter la gestion durable des territoires insulaires et de leur résilience, dont la phase pilote du programme vient de débiter avec 23 îles partenaires.

- À travers l'*Initiative internationale pour les récifs coralliens (ICRI)*, dont elle assure le secrétariat conjointement avec Madagascar jusqu'en 2017, la France porte des objectifs ambitieux de protection des coraux et des mangroves à l'échelle mondiale. Un plan d'action pionnier a été adopté par l'Assemblée générale de l'ICRI en novembre 2016, et une mobilisation de haut niveau en sa faveur a été portée avec l'appui de la France à l'occasion de la COP22 Climat en novembre 2016 et de la COP13 Biodiversité de décembre 2016. La France a également apporté un soutien financier au Programme des Nations Unies pour l'Environnement, afin d'accélérer la mise en œuvre de ce plan d'action.

- La France a activement participé à la conférence « *Our Ocean* » qui s'est tenue à Washington les 15 et 16 novembre 2016 et œuvré au soutien d'initiatives internationales fédératrices pour compléter et amplifier les résultats de la conférence climat. Elle a rejoint la *coalition contre l'acidification de l'Océan*, où sa contribution se traduira notamment par la mobilisation de scientifiques français. Elle a

lancé à Washington, avec l'appui du Maroc et de Monaco, une *coalition internationale volontaire pour réduire la pollution par les sacs plastique*. L'objectif de cette coalition est de coordonner et de renforcer les nombreuses actions déjà prises aux niveaux nationaux et internationaux en matière de lutte contre les déchets plastiques en mer. La France appuie la mobilisation en faveur du portage de l'initiative dans toutes les enceintes internationales pertinentes.

- Avec l'appui du Maroc qui a présidé, en novembre 2016, la COP22 Climat, une journée entière a pu être consacrée aux océans dans cette enceinte. A Marrakech, la France a accueilli sur son pavillon la deuxième réunion de haut niveau des pays engagés dans le cadre de la coalition « *Because the Ocean* ». Elle a aussi présenté une démarche de soutien à l'action en Méditerranée portée en partenariat avec le Maroc et la Principauté de Monaco avec l'appui de l'Union pour la Méditerranée et du Plan d'action pour la Méditerranée du Programme des Nations unies pour l'environnement. Dans cette mer à très forts enjeux, la conférence internationale des « *Solutions pour la Méditerranée* » de février 2017 à Paris s'inscrit dans la traduction concrète des dialogues de haut niveau conduits à Washington et à Marrakech, en mobilisant non seulement les États du pourtour méditerranéen, mais également, de façon participative, l'ensemble de la société civile.

L'environnement marin, en particulier à travers la contribution de l'océan à la lutte contre le changement climatique, est désormais inscrit durablement sur l'agenda international. La France reste mobilisée et entend poursuivre l'action avec ses partenaires.

- L'« *Alliance des initiatives océan et climat* » soutenue financièrement par la France et facilitée par la Plateforme Océan-Climat, coalition d'acteurs de la société civile, confortera la dynamique des actions concrètes lancées dans ce domaine. L'Alliance a vocation à soutenir l'action des nombreuses initiatives et coalitions existantes et à identifier des projets pilotes transversaux en vue de conforter la mise en œuvre résolue de l'Accord de Paris sur les enjeux marins et côtiers.

Océans et développement durable

- La France avait soutenu l'adoption, par le Sommet des Nations Unies pour le développement durable de septembre 2015, d'un objectif de développement durable spécifiquement dédié aux océans et aux ressources marines, l'Objectif de développement durable ODD14. Elle a appuyé le principe d'une conférence internationale de haut niveau en juin 2017, proposée par Fidji et la Suède. Alors que le changement climatique va poser un défi majeur à l'atteinte de cet Objectif, la France souhaite que les interactions entre les océans et le climat soient pleinement intégrées dans la mise en œuvre de cet objectif. Elle souhaite que l'esprit de mobilisation et de partenariat qui a présidé à la mise en place de l'Agenda de l'action océan-climat perdure et contribue à l'atteinte de l'ODD14.

- Enfin, la France mobilise les différents leviers de financements de sa coopération internationale au développement en faveur de la thématique océan-climat, à travers des mécanismes bilatéraux comme le Fonds français pour l'environnement mondial, l'Agence française de développement, les subventions des ministères, la coopération décentralisée de ses agences (Agences de l'eau, Conservatoire du littoral), en complément des financements multilatéraux spécifiques auxquelles elle participe et des contributions en nature de ses experts.

Courtesy Translation of the French Contribution

Summary: the integration of ocean issues in climate change negotiations during the 2015 Paris Climate Conference was instrumental in identifying the protection of the ocean and marine biodiversity as key challenges to climate change policies and actions on the international agenda. The “*Ocean and Climate Initiatives Alliance*” will consolidate and coordinate the concrete actions initiated in this area by individual partnerships.

Ocean and climate actions

At the instigation of France for the first time the Ocean has been positioned as a major climate-related cross-cutting issue at the 21st Conference of Parties to the UN Framework Convention on Climate Change (UNFCCC COP21) that was held in Paris from the 29th of November to the 13th of December, 2015.

The ocean was fully taken into account in official negotiations, was included in the Paris Agreement, and was the core issue of many alliances and dedicated partnerships. Over 30 events and 7 exhibitions have been devoted to the theme “Seas and Oceans”, and marine and maritime issues have been addressed in more than 70 events. The marine environment has been highlighted throughout two dedicated days and its integration in the Action Agenda both raised awareness of the international community to the importance of the ocean in the fight against climate change and catalysed coordinated action.

The presentation of the initiative “*Because the Ocean*” and the signature of the related Declaration in November 2015 by 22 States, including France, has been a high level event prior to COP21. During the “*Action Week*”, inside the negotiations zone, on 2 December, a high level segment, initiated by France and entitled “*The Ocean is a solution for the Climate*”, has for the first time gathered an international action-oriented partnership. The following days of 3 and 4th of December 2015 were devoted respectively to a Forum for civil society representatives and an “*Ocean Day at COP21*” with the participation of international decision-making leaders.

During COP21, major public and private sector’s actors have shown the strength and diversity of their commitments to protect the ocean and reinforce its role in climate change. These collective efforts are being carried out, with the support of France and its partners. A number of commitments made at COP21 have already been achieved or strongly implemented.

Oceans and regional and multilateral actions

The Intergovernmental Panel on Climate Change (IPCC) has integrated in his work plan in April 2016 the development of **an ocean assessment**.

France has strongly supported such a decision, along with other members of the Initiative “*Because the Ocean*”. The “*IPCC special report on climate change and oceans and the cryosphere*” will synthesize the existing scientific knowledge on most issues related to the interactions between climate and the ocean. It should include ocean acidification and sea level rise, along with the potential impacts on marine ecosystems and food resources. This groundbreaking assessment is expected to be endorsed and published in 2019.

France is willing to provide the expertise of its scientific community, including oceanographers, glaciologists, climatologists to the elaboration of the special report. The scientists, especially within the TARA-Oceans project financially supported by France, have been studying and sampling marine

ecosystems throughout the world. The scientific vessel *Tara* started in May 2016 a new research campaign with a view to raising awareness and sharing information and results with local populations. She is expected to sail the Pacific for two years over 1000 000 kms.

With then countries members of the International Maritime Organisation (IMO), France supports the reduction of green house gases in shipping. France has promoted the adoption of an international system for the control of green house gases, to support efforts towards a policy of reduction of green house gases by the IMO.

During 2016, the President of the UNFCCC COP21 has been continuously fostering a strong dynamic to the Ocean-Climate Action Agenda.

-The *West Africa Coastal Management Program*, designed to reduce the vulnerability of coastal areas, has been launched by the World Bank, with the support of France and other partners. During a high level event on oceans it organised in New-York on April the 21st, 2016 in order to strengthen international mobilisation in favour of the ocean, France signed a Memorandum agreement with the World Bank, and has since decided to grant new funding to this initiative.

-France is also maintaining its support to the *CREWS Initiative (Climate Risk ans Early Warning System)* launched with the United Nations Office for Disaster Risk Reduction, the Global Facility for Disaster Reduction and Recovery managed by the World Bank and the World Meteorological Organisation in order to provide territories threatened by sea level rise and submersion risks with early warning systems. The CREWS Initiative, which started as a key deliverable of the COP21 Action Agenda in terms of adaptation and resilience is now supported by the G7. In September 2016, it held its first steering committee, and five initial projects have been approved in November 2016.

-Following the "*Small Islands in the Mediterranean*" Initiative, France launched in 2016 a new project "*International Initiative on Sustainable Islands*" to support small islands sustainable management and their resilience. The program's pilot phase has recently been launched with 23 partner islands.

-Through the *International Coral Reef Initiative (ICRI)*, of which France and Madagascar co-chair the Secretariat until 2017, ambitious objectives for coral and mangrove protection are being pioneered in the newly adopted Plan of Action, as a follow-up to the General Assembly of November 2016. High-level mobilization in favour of ICRI has been obtained with French support during Climate COP22 in November 2016 and Biodiversity COP13 in December 2016. France has also supported financially the United Nations Environmental Program, in order to accelerate the implementation of this action plan.

-France took an active role in the conference "*Our Ocean*" which was held in Washington, D.C. 15-16 November 2016, and supported international initiatives to enhance the successful outcomes of the climate conference. It joined the *Coalition against Ocean Acidification*, which it will help *inter alia* by mobilizing French scientists. In Washington, France launched an *International Coalition to reduce plastic bags pollution* with the support of Monaco and Morocco. The coalition aims at supporting and strengthening the many institutions and on-going process active against plastic debris in the ocean. France wishes to support this initiative in all relevant international fora.

-With the support of Morocco, who chaired Climate COP22, an entire day was devoted to ocean and marine issues during this conference. In Marrakesh, "*Pavilion France*" hosted the second high-level meeting of countries members of the coalition "*Because the Ocean*". With Morocco and Monaco, in partnership with the Mediterranean Action Plan of the United Nations Environmental Program and the Union for the Mediterranean, France expressed support for actions taking place in the

Mediterranean. An international conference “*Solutions for the Mediterranean*” is due to take place in Paris in February 2017 as a follow-up to high-level discussions carried out in Washington and Marrakesh. The objective is to involve not only representatives of countries bordering the Mediterranean, but also, through a participative process, the civil society as a whole.

The marine environment, especially through the contribution of the ocean in the fight against climate-change, is now durably part of the international agenda. France is staying mobilised and means to keep acting with its partners.

-The “*Ocean and Climate Initiatives Alliance*” financially supported by France and facilitated by the Ocean-Climate Platform, a coalition of stakeholders from the civil society, will strengthen the dynamic of actions launched in this area. The Alliance aims to support the many existing institutions and to identify cross-cutting pilot projects in order to strengthen the implementation of the Paris Agreement on marine and coastal issues.

Oceans and sustainable development

- France supported the adoption of a Sustainable Development Goal specifically dedicated to ocean and marine resources at the United Nations Summit on Sustainable Development in September 2015 – SDG14. It welcomed the proposal by Fiji and Sweden to organise a high-level international conference in June 2017. Because climate change will be a major challenge to the achievement of this Goal, France wishes that interactions between ocean and climate are fully taken into account in the implementation of this Goal. It wishes that the spirit of mobilisation and partnership that saw the adoption of the Action Agenda continues and helps achieve SDG14.

- Finally, France wishes to use the various financial instruments of its official development assistance to the benefit of ocean-and-climate-related projects, through bilateral mechanisms such as the French Global Environment Facility (FFEM), the French Development Agency (AFD), cooperation schemes by French Ministries, Departments, local authorities and agencies, as well as through its share in multilateral aid and in-kind contributions from French experts.

Italy

(i) Collection of relevant scientific data

In the framework of the MSFD implementation, Italy has planned to monitor the acidification's levels in coastal and offshore areas in order to fill in the lack of data and to properly define the phenomenon. Additional studies are needed to better characterize the CO₂ system and will be performed through hydrological and biogeochemical monitoring surveys with the installation of observing platforms for the collection of high-frequencies automated sea surface pCO₂ measurements of physical and chemical data.

Cooperation activities

Italy has supported projects specifically dedicated to address the interlinkages among climate change, oceans protection, renewable energy and food security while ensuring full involvement of local communities.

In **Kiribati** and in **Tuvalu**, activities are focused on the operationalization of numerous fish centers supplied by solar power system to drive fish cold-storage systems such as chest freezers, cooler boxes, and ice maker machines. Reliable and affordable electricity for fish storage and production of ice flakes increases the freshness and quality of the fish, improves the living conditions and welfare of the people and contributes to the overall food security, while improving the utilization of marine resources on a small and local scale.

In **Palau**, Italy has supported the establishment of the first Nationwide Marine Sanctuary to increase socio-ecological resilience and promote adaptive responses. The Marine Sanctuary comprises Palau EEZ in its entirety and establishes a no-take zone that covers over 80% of it. The remaining 20% is a highly regulated Fishing Zone. The marine Sanctuary is based on the development of a sustainable economic model to support livelihoods, increasing the level of domestic engagement of fishermen and gradually managing fishing efforts at a sustainable level, with a view to supply domestic food security and tourism markets.

Building on Palau's priority to protect vulnerable reef areas from fishing activities, the Project recognizes Palau ambition to manage threats to marine ecosystems more sustainably, focusing on local communities benefits and tourism opportunities.

In the **Maldives**, Italy is cooperating in a project dedicated to ocean energy resources assessment with a view to identify the energy potentials of tides and the use of proper, clean, resilient technology.

Furthermore, Italy and other country partners, have launched the **10X20 Initiative** dedicated to build partnerships and promote scientific knowledge to implement SDG 14. Oceans and Seas are crucial in safeguarding the planet and the wellbeing of all people. In this context, countries participating to the Initiative have recognized the importance of marine protected areas as a tool to mitigate and adapt to the effects of climate change and to effectively conserve and restore ecosystems.

United Kingdom

The UK Ocean Acidification research programme (UKOA)

1. An extensive range of research projects were supported by the UK Ocean Acidification research programme (UKOA) between 2010 and 2015. Additional synthesis and knowledge exchange activities are still ongoing. The Natural Environment Research Council (NERC), the Department for Environment, Food and Rural Affairs (Defra) and the then Department of Energy and Climate Change (DECC; now the Department for Business, Energy and Industrial Strategy, BEIS) worked in close partnership on this jointly-funded programme, with support of £12.5m.

2. The UKOA programme involved over 120 scientists in 26 research laboratories across the UK. Close collaborations with European and other international research activities were also established. Such links included those with the EU-supported EPOCA (European Project on Ocean Acidification) and MedSeA (Mediterranean Sea Acidification in a Changing Climate) programmes; the German Biological Impacts of Ocean Acidification (BIOACID) programme; and the US Ocean Acidification Program.

3. In addition to providing high-quality independent advice to Government and other UK stakeholders UKOA also developed a highly successful UK network for ocean acidification science. Furthermore, UKOA helped inform, the Intergovernmental Panel on Climate Change (IPCC), the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD), and jointly established, with US colleagues, the Global Ocean Acidification Observing Network (GOA-ON). Additional information on UKOA's scientific activities and their significant impacts is available on the programme's website , now in archive status.

4. UK research and experts provided a key input to the ocean acidification components of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), published 2013/14. UK experts have also assisted in scoping an IPCC Special Report on Climate, Oceans and the Cryosphere, and are expected to contribute broadly to the drafting of the report, to be published in 2019, and in reviewing ocean acidification literature and its wider context, for the IPCC Sixth Assessment Report, to be published in 2021/22.

5. Three UK authors (with support from UKOA) led the preparation of the 2014 report "An Updated Synthesis of the Impacts of Ocean Acidification on Marine Biodiversity" for the Convention on Biological Diversity.