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Achieving good governance for Sustainable Marine Development:
The role of the World Ocean Council

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In talking about "Good Governance for Sustainable Marine Development" it is critical to have a clear understanding of the status and trends in economic use of marine space and resources – as well as the potential new kinds and areas of use. Achieving a balance between 'blue' growth, jobs, and a sound maritime environment will largely be based on addressing the opportunities and challenges facing the diverse, extensive set of existing ocean activities outlined below. Success in improving ocean governance and sustainable marine development will require coordinated leadership and collaboration by the diverse ocean business community. The World Ocean Council providing industry leadership in "Corporate Ocean Responsibility" is essential to navigate this critical juncture and ensure both the long term health of the ocean and responsible industry use of space and resources.

Status and trends in economic use of marine space and resources

Main human activities raising issues on oceans are: shipping, offshore oil and gas, fisheries, aquaculture, offshore wind and ocean energy, and marine, coastal and cruise tourism.

Shipping

International shipping traffic growth has been twice that of economic activity for the past 60 years, during which time world trade more than trebled to 45% of global GDP. There are approximately 50,000 internationally operating merchant ships in service. Globally shipping is generally either as liquid cargo, e.g. oil, petroleum products, chemical, or as dry cargo/bulk goods, for which the most important are: iron ore, coal, grain, phosphates, bauxite, non-ferrous metal ores, feed and fertilizers. The most significant cargo worldwide is crude oil, which makes up about 25% of all goods transported by sea. Most goods otherwise travel by container ship and since 1985 global container shipping increased by about 10% annually, with about 137 million containers transported in 2008. There are a relatively small number of principal transport routes, and the busiest are the approaches to the ports of Europe, US and East Asia, particularly Japan but also Shanghai, Singapore and Hong Kong. Narrow straits concentrate maritime traffic, e.g. Straits of Dover, Gibraltar, Malacca, Lombok and Hormuz, and the Cape of Good Hope. The heavy traffic to Northern

Europe and the Eastern US, and between these two areas, makes the North Atlantic an area of especially high shipping traffic, with associated challenges.

Offshore oil and gas

Offshore oil and gas industry fields explored in the past were relatively shallow and limited in size. Now, 45% of the 2.7 billion barrels of recoverable oil left is offshore and energy firms will gradually move to deeper waters as shallow waters reservoirs are depleted. By 2035, deep-sea production will almost double to 8.7 million barrels a day, driven by developments in the US Gulf of Mexico, Brazil, West Africa and Australia (mainly for gas).

The Gulf of Mexico remains the world's most valuable deepwater province, despite the many recent large finds elsewhere. Since the discovery of ultra-deep oil reserves under a thick layer of salt off Brazil, the offshore oil and gas industry is exploring ever deeper and drilling further under the sea bed – exploring the subsalt layers 7 km below sea level (below 2.5 km of ocean water, 3 km of rock, and 2-3 km compacted salt). "Ultra-deep" wells, drilled in water at least 1.5 km deep, now account for more than half of all the world's new discoveries. Addressing the technological and safety challenges requires significant capital, with investment in the global deepwater and ultra deepwater exploration and production market worth US$3.2 billion in 2013 in an industry where a single offshore well may cost US$70 million to drill. In a global fleet of over 1,200 rigs and drilling vessels, more than 80 rigs now have the ability to work in ocean depths of more than 2.5 km. That compares to fewer than 10 in the year 2000 and double the number at work just two years ago.

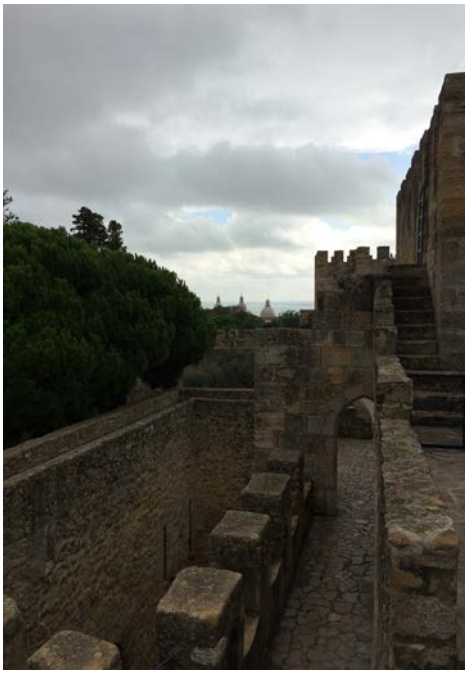
Fisheries

The world's most productive fishing grounds are largely confined to areas that make up less than 10% of the global ocean, often associated with areas of strong primary production of biomass in the oceans, i.e. continental shelves and upwelling areas. Marine fishery catches increased from 16.7 million metric tons (MT) in 1950 (86% of total world production) to a peak of 87.7 million MT in 1996. Since then, global landings of fish and seafood have declined, with fluctuations reflecting the variation in catches from a few highly productive areas, particularly the Northwest and Southeast Pacific that account for a large portion of pelagic species catches. Marine fisheries stabilized at about 80 million MT in 2009, and now represent 49% of the world's fish production. Based on average catches in the 2005-2009 period, the most productive fishery areas are the Northwest Pacific (25%), Southeast Pacific (16%), Western Central Pacific (14%), Northeast Atlantic (11%), and Eastern Indian Ocean (7%). All other marine fishing areas contribute less than 5% of the global total catch. The proportion of overfished stocks has increased from 10% in 1974 to 30% in 2009.

The patterns of marine fisheries landings differ over time. Some areas have oscillations in total catch but a declining trend is not obvious. In the Atlantic, this includes the East Central and Southwest areas. Many others have a decreasing trend in catch; this includes four of the Atlantic fishery areas: Northwest (down 55%), West Central (down 46%), and Northeast (down 35%), with the Southeast down somewhat less. Thirdly there are areas that have shown a continual increase in catch since 1950 – none in the Atlantic. In the high seas, migratory tunas and related species are the most valuable high-seas fishery resources, with production highest in the Pacific, followed by the Atlantic and Indian Oceans. The harvest of high-seas fishery resources increased from less than 0.5 million MT in the early 1950s to 5.5 million MT in 2006.

Aquaculture

Aquaculture provides half of the 15.7% of the animal protein consumed globally. Aquaculture has grown at 6.6% per annum, making it the fastest-growing animal-food-producing sector – much faster than the 1.8% annual global population increase. While aquaculture production (excluding aquatic plants) was less than 1 million MT per year in the early 1950s, production in 2008 was 52.5 million MT, with a value of US$98.4 billion. Aquatic plant production through aquaculture in 2008 was 15.8 million MT, with a value of US$7.4 billion. By 2030 aquaculture will account for 65% of fish protein production.



Lisbonne, Château, 17 octobre 2014

World aquaculture is heavily dominated by the Asia-Pacific region, which accounts for 89% of production in terms of quantity and 79% in terms of value, and is growing at more than 5% a year. This is mainly because of China, which accounts for 62% of quantity and 51% of value. Aquaculture production bordering the Atlantic is a minor component of global totals: Europe (3.6%), South America (2.2%), North America (1.5%), and Africa (1.4%). In the EU, aquaculture currently provides 25% of fish protein and more than 90% of aquaculture businesses in the EU are SMEs, providing around 80,000 jobs.

Offshore wind and ocean energy

Offshore winds tend to blow harder and more uniformly than on land, providing higher potential for electricity generation and smoother, steadier compared to land-based wind energy. Globally, total installed offshore wind capacity was 3,117.6 megawatts (MW) in 2010, with 1,161.7 MW added in that year alone. The growth rate of 59% in 2010 was far above the growth rate of the wind sector overall. The North Atlantic has the potential to generate considerable renewable energy from offshore wind, especially during the northern winter. As of 2010, offshore wind farms had been installed by 12 countries, 10 of whom were in Europe. A total of 10 gigawatts (GW) of capacity had been installed, led by the UK, Denmark, the Netherlands, and Sweden. The European Commission in 2008 had a target of 40 GW of offshore wind power capacity by 2020 and 150 GW by 2030.

The world's ocean waves, currents, and tides are estimated to contain more than 5,000 times current global energy demand, with estimates that marine resources could feasibly provide 20,000 TWh (terawatt-hour) of electricity per year, which is more than the entire global generation capacity. A variety of mechanisms are under development to convert ocean energy efficiently from these sources into electrical power, and several devices are being tested, but the engineering challenges for technology to survive for long periods of time in the harsh marine environment presents many challenges. The maturation of ocean power technologies depends upon deployment of substantial demonstration and commercial projects in near-shore areas. In the Atlantic, some of the greatest potential and need for ocean energy is in the Northeast, and this is where the majority of the research and development is taking place. Currently, there are only a few hundred MW worth of projects installed around the world, mostly in European waters.

Marine, coastal and cruise tourism

The number of cruise ship passengers has grown nearly twice as fast as world international tourist arrivals from 1998-2008. With about 14 million passengers in 2010, the industry is expected to grow at 8.5% per year over the next decade. The 100 plus ships of the main international cruise industry association account for about two-thirds of the world's cruise ships, comprise less than 5% of all passenger ships and only 0.2 percent of the world's trading fleet. About 70% of cruise destinations are in the Caribbean, Mediterranean, Western Mexico and the South Pacific. In 2001, the North American cruise industry contributed US$20 billion to the US economy, a US$2 billion increase over 2000. Within Europe, cruise tourism employs nearly 150,000 people and generates direct turnover of €14.5 billion, with the European market growing rapidly. Still, about half of the world's cruise passengers depart from US ports for the Caribbean.

In the Caribbean, tourism overall provides about 18% of regional GDP (and more than 50% in several individual nations), approximately 16% of employment, and 25% of foreign exchange earnings. Total tourism demand in the Caribbean region is currently US$40.3 billion and grew to US$82 billion by 2014. Tourism receipts directly account for more than 75% of total exports and indirectly contribute to the growth of other sectors including agriculture, construction, and manufacturing. Capital investment in the industry is estimated at US$7.4 billion, or 21.7% of total investment and generating one in seven jobs in the Caribbean. In Europe, the coast is the preferred holiday destination of 63% of European tourists and maritime and coastal tourism is the largest single maritime economic activity, employing 2.35 million people, equivalent to 1.1% of total EU employment. Cross-border coordination as part of a sea-basin strategy can contribute to the development of high-value tourism areas.

Addressing Ocean Industry Sustainability Challenges and Opportunities

As we have seen, sustainable use of the dynamic, interconnected global ocean presents unique opportunities and challenges for ocean industries. As the health of the marine environment declines, ocean industries are often held responsible for their impacts to the ocean by the public, governments, non-government organizations (NGOs), and inter-governmental organizations (IGOs). Advocacy groups are confronting ocean industries on a sector, incident, or local basis (e.g. oil spills, deep sea trawling, port expansion). Moreover, ocean environmental concerns are increasingly being pursued through globally coordinated campaigns (e.g. ocean zoning, marine protected areas (MPAs), ocean noise, marine debris, greenhouse gas emissions).

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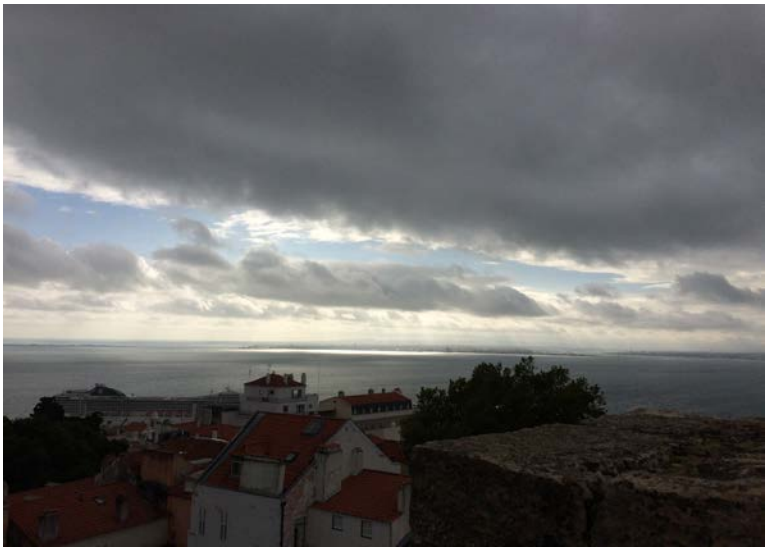

Ocean stakeholders are pushing for increased regulation in a variety of venues where international rules are established. Some of the most important governance developments are being pursued through the non sector-specific international policy processes that include oceans, e.g. the Convention on

Biological Diversity (CBD) and the UN Convention on the Law of the Sea (UNCLOS), etc. Balanced, comprehensive information on industry efforts to address marine environmental issues is often not seen in these processes, and there is a need for strategic, coordinated industry participation. Marine industries are often portrayed only as the cause of ocean problems, and their inability to create any other perception if they are not "at the table" and constructively engaged in ocean developments.

As a result, private sector access to ocean resources, services and space – even by companies with the best environmental record – is increasingly at risk from the loss of the social license to operate in the seas. Many of the policy, practical and reputational aspects of ocean industry activities are now affected, if not dominated, by environmental concerns. These issues are affecting all industries that use ocean space and resources. This is creating important needs and opportunities for collaboration, synergies, and business benefits among the ocean business community.

Catalyzing International Ocean Business Leadership and Collaboration, the WOC

The World Ocean Council (WOC) was established to address the ocean sustainability issues and opportunities critical to business. The UN Secretary-General's 2010 report on oceans and the law of the sea noted there is a need to "create awareness and understanding among industry of the ecosystem approach, marine biodiversity and marine spatial planning, develop regional ocean business councils and strengthen efforts to create a global cross-sectoral industry alliance to constructively engage in United Nations and other international processes relevant to oceans, through organizations such as the World Ocean Council".

The World Ocean Council (WOC) harnesses the potential for global leadership and collaboration in ocean stewardship by responsible ocean companies that are well placed to develop and drive solutions. Many companies want to address marine environmental issues, differentiate themselves from poor performers, collaborate within and across sectors, and engage other ocean stakeholders – and now there is a structure and process for companies to work on complex, intertwined, international ocean sustainability issues.

The WOC with its international, multi-sectoral structure and process for leadership companies from the ocean business community is different from national or sectoral industry associations and is uniquely positioned to serve as a portal for this business community to work with other clusters and research institutions and consortia. A multi-sectoral and multi-stakeholder approach can result in cost-savings (e.g. collaborative research to develop best practices in sustainability and find science-based solutions to shared issues) and reduce the risk of costly, unplanned and unnecessary restrictions to responsible business operations in the marine environment.

Protecting the seas to protect your business makes good business sense, e.g. through the economies of scale that can be achieved in joint research on shared problems. Identifying problems and developing solutions must be based on good science, credible risk assessment, performance monitoring and the best available technology – and must be tackled at the scale at which the impacts are accumulating.

Companies with a long-term view of their ocean business are also looking to collaborate within and between industries on solutions through participation in the WOC. This not only applies to the companies that directly operate or use marine

space or resources, but also to the wide range of industries linked to, or dependent on, those direct ocean users. This includes marine technology, mining, manufacturing and many sectors. In fact, any company that transports its products by sea is part of the associated marine environmental impacts.

To address priority, the WOC has created cross-sectoral industry working groups in the five thematic program areas that have emerged: ocean policy and governance, Marine Spatial Planning (MSP), operational/technical issues, e.g. invasive species, marine debris, marine sound, marine mammal impacts, etc., regional interests, e.g. the Arctic, the Mediterranean, the Caribbean, adaptation of ports and coastal infrastructure to sea level rise/extreme weather events and the Smart Ocean-Smart Industries (SO/SI).

Smart Oceans, Smart Industries a landmark initiative of the WOC to help bridge the gulf in ocean knowledge

WOC members have also identified the need and opportunity to develop and coordinate a program or "platform" to expand, improve and better coordinate the role of industry in collecting and sharing ocean and atmospheric data. The objective of this initiative, launched at the end of 2011 at a UNESCO International Commission workshop, is to ensure a wide range of industry vessels and platforms by providing routine, sustained, standardized information on the ocean and atmosphere, contributing to describing the status, trends and variability of oceanographic and atmospheric conditions and improving the understanding, modeling and forecasting of ocean ecosystems, resources, weather and climate.

The program will expand the number of vessels and platforms used to collect standardized ocean, weather and climate data, improve the coordination and efficiency of data sharing and input to national/international systems and build on "ships/platforms of opportunity" programs. All SO/SI members can be part of this initiative.

At the present time, the WOC is moving forward on this initiative and defining next steps such as the value proposition/rationale for industry and science, an inventory of existing ships/platforms of opportunity programs, the "menu of options" for voluntary observations, interface requirements for platforms/payload, the principles, practice and platform for industry data sharing and access and regional "Smart Industries" pilot projects.

To conclude, the global ocean hosts an increasing kind, level and extent of economic activities, so industry is key to ocean health. The private sector needs to ensure access and a social license to operate, reduce risk, and implement solutions. The business value for the ocean business community coming from collaboration on sustainability, stewardship and science is compelling.

The WOC, the international multi-industry leadership alliance of ocean companies is a leadership opportunity for responsible ocean companies to address risks and opportunities and most importantly, a powerful tool in ensuring good governance for sustainable marine development. The growing ranks of WOC companies are finding direct business benefits in the synergies and economies of scale in collaborating with like-minded peers in other companies on these shared ocean industry challenges. As a result, an increasing number and range of ocean industry companies from around the world are distinguishing themselves as leaders in "Corporate Ocean Responsibility"

by joining the WOC. The Smart Ocean/Smart Industries initiative of the WOC gives insight on how through such a collaboration, industry can also help in bridging the gulf in ocean knowledge ■

WRIC 2014
Oceanário de Lisbonne
Les 15 & 16 octobre

Le World Research and Innovation Congress sur les océans s'est tenu à l'Oceanário de Lisbonne les 15 & 16 octobre 2014. Il a rassemblé des chercheurs, des acteurs économiques et des décideurs politiques de 32 pays sur la question de la recherche sur les océans.

Un large panel de disciplines était représenté : la géologie et la géophysique marines, par exemple, avec Gilles Lericolais, de l'IFREMER, qui s'est intéressé aux systèmes de sédimentation marins, et avec Luis Pinheiro ; les sciences marines et environnementales avec Henrique Cabral, du MARE, centre de recherches marines. Alex Rogers, du département de zoologie de l'université d'Oxford, travaille sur la biologie marine. Luis Quaresma, de l'Institut d'hydrologie de la Marine Portugaise, s'est spécialisé dans l'océanographie physique, et s'intéresse aux marées et aux dynamiques des vagues, ainsi qu'aux mouvements des sédiments et aux turbulences océaniques. Deniz Karaca travaille sur la biogéochimie marine, Hans-Otto Pörtner sur la physiologie animale marine, Marta Rodrigues sur l'ingénierie environnementale, Emanuel Gonçalves s'est intéressé à l'écologie marine et Joaquín Tintoré aux dynamiques océaniques côtières, notamment aux impacts des fronts.

Nombre de speakers venaient du monde de la recherche, étant donné le thème du congrès, mais quelques présentations ont été faites par des représentants du monde des affaires : le cabinet de conseil et d'audit PricewaterhouseCoopers, un des principaux prestataires internationaux de services en management des risques DNV GL, le cabinet d'avocats Vieira de Almeida & Associados…

Différents acteurs de la sphère politique étaient aussi présents : la Commission Européenne avec Lowri Evans, DG des affaires marines et de la pêche, l'UNESCO avec Wendy Watson-Wright, le Secrétaire d'État portugais pour la Mer, Monsieur Pinto de Abreu.