

3 Politics and the oceans

> The oceans can only be protected if all stakeholder groups pull together. Good governance of the oceans therefore calls for participation from the local people directly affected and from the economic and policy spheres. National and international agreements are in place, enshrining comprehensive marine protection in law. However, the rules laid down need to be respected in practice.



On the difficulty of governing the sea

> Worldwide there are dozens of different institutions dealing with the use or protection of the sea. These include multinational organizations like the United Nations and, of course, national governments themselves. The fragmentation of responsibilities makes it harder to ensure that use of the sea is entirely sustainable. Experts are therefore trying to define universally applicable rules for good governance of the sea.

Lack of common purpose

The sea and its ecosystem services are a common resource. Unlike privately owned properties on land, for example, they do not belong to individuals but are available to the whole community.

Many of the resources in the sea are finite, fish stocks being one example. If individual nations or companies help themselves to the sea’s resources as they see fit, sooner or later these resources will be exhausted. Today many fish populations are already classified as overfished due to excessive catches over the years. Economists use the term “commons” to talk about publicly available resources (like the fish in the sea) which are freely usable but limited in supply. Originally the concept referred to land areas such as fields or pastures used collectively by the citizens of a community.

The problem with the use of commons has always been that those interested in using this kind of resource find themselves competing with each other. If one company or country makes use of a common resource, less of it is available for the other stakeholders. From a purely economic viewpoint, it is worthwhile for a company or country to exploit these resources to the fullest possible extent in order to secure the maximum possible share and generate profits accordingly.

In past decades this approach has led to ever more serious harm to the marine environment. Unrestrained fishery is one of the uses of the commons that will tend to cause such harm. Likewise, the discharge of pollutants from industry or from municipalities into the sea is another example of a use of marine commons that is ultimately selfish. Individual companies, municipalities or countries save themselves large expenditures for the dis-

posal of pollutants by making use of coastal waters as a free drainage tank for effluents. For the protection of commons to make sense, on the other hand, many users or states need to cooperate.

An example that clearly underscores this dilemma is fishing on the high seas, in international waters. Here the prevailing principle is that of freedom of the sea, according to which all nations can fish at will. It would be futile if one country alone refrained from fishing in order to protect overfished populations while other countries continued to fish excessively. It follows that comprehensive protection of the sea will only be possible in future if all nations will pull together with a common purpose.

Ocean governance – a nebulous concept

Marine protection is a matter that concerns everyone. But the question remains, how can use of the sea be regulated and governed to ensure that it is in fact sustainable? In this context researchers often speak of “governance”. Much like the term “sustainability”, no standard definition of the expression “ocean governance” currently exists.

The Club of Rome, an international non-governmental organization (NGO) and expert panel founded in 1968, which deals with the negative consequences of economic growth, attempted to come up with a universal definition of the term. Accordingly, “ocean governance” was framed as the “the means by which ocean affairs are governed by governments, local communities, industries, non-governmental organizations, other stakeholders, through national and international laws, policies, customs, traditions, culture, and related institutions and processes.”



3.1 > A factory ship where fish are processed on board. Whether this large-scale industrial form of fishery contributes to the decline of a fish population depends on the condition of that population to begin with.

Thinking in zones

This ideal of global sustainable ocean governance has not been achieved so far, for several reasons. One reason is the subdivision of the ocean into various zones, each of which is the responsibility of different institutions. According to the Convention on the Law of the Sea (UNCLOS), which was passed in 1982 by the United Nations Conference on the Law of the Sea as a kind of global constitution of the oceans and entered into force in 1994, today the following zones of the ocean are differentiated:

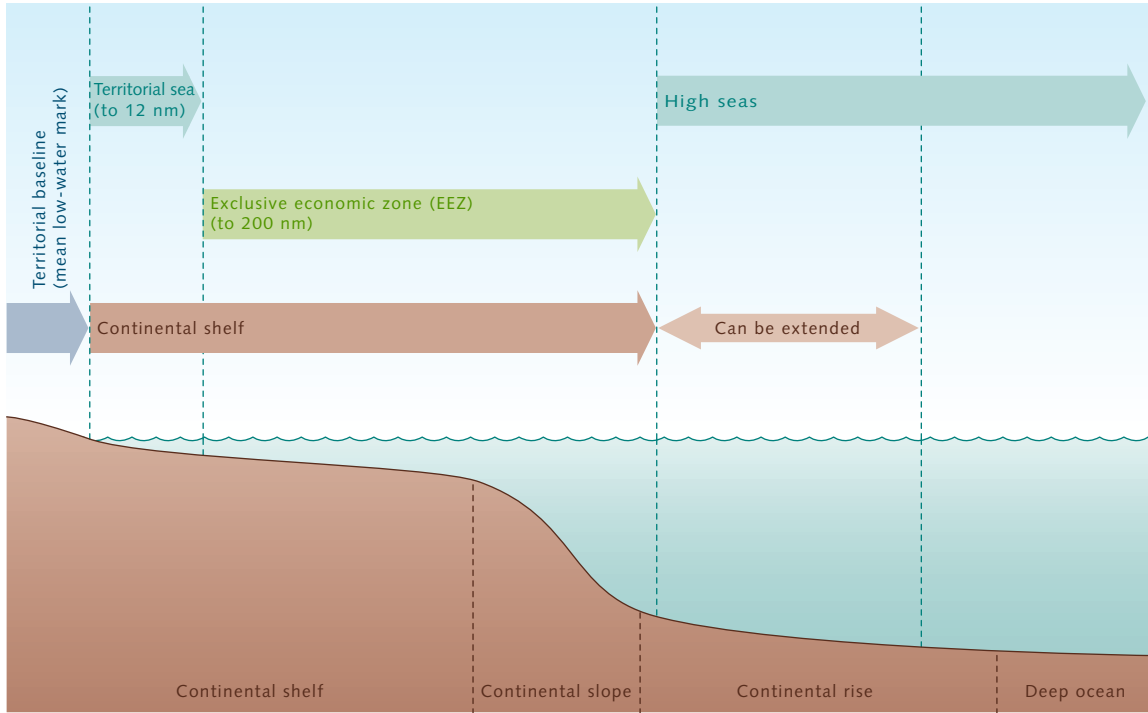
TERRITORIAL SEA: The territorial sea is the 12-nautical-mile zone. It belongs to a state’s sovereign territory, and the right of peaceful passage prevails for international shipping. The other activities in this zone are subject to the legislation of the specific states. Legislation must be in line with internationally agreed rules provided that the state has ratified UNCLOS.

EXCLUSIVE ECONOMIC ZONE (EEZ): This extends from the outer edge of the territorial sea to a distance of 200 nautical miles (approximately 370 kilometres) offshore. Therefore the EEZ is also called the 200-nautical-mile zone. Included within the EEZ are the sea floor and the water column. Unlike the territorial sea, the EEZ is not part of a state’s sovereign territory. Nevertheless, in its own EEZ only the coastal state may extract resources such as petroleum and natural gas, mineral resources and, of course, fish stocks. Other nations may only use the resources if the coastal state consents. Resource extraction in the EEZ is subject to the coastal state’s legislation, which in turn must be in line with the international rules laid out in UNCLOS.

CONTINENTAL SHELF: The continental shelf is the gently or steeply sloping sea floor off the coast, which is a natural geological extension of the mainland. In the case of such a geological formation the country can exploit the sea

floor and its mineral resources up to a maximum of 350 nautical miles off the coast. In other words, it can extend its continental shelf rights.

HIGH SEAS: Adjoining the 200 nautical mile zone are the high seas, which no national state may claim for itself alone; they are available for use by all countries. Nevertheless, the use of resources in sizeable areas of the high seas is regulated. Fisheries, for instance, are regulated by one of the Regional Fisheries Management Organizations (RFMO) and its member countries, which specify maximum catch sizes for fish species. For the use and distribution of raw materials on the sea floor, in contrast, only the International Seabed Authority (ISA) is responsible.



3.2 > The United Nations Convention on the Law of the Sea (UNCLOS) partitions the ocean into different legal zones. Within this framework, the sovereignty of a state diminishes as distance from the coast increases. Adjacent to the inner waters is the territorial sea, which is also known as the 12-nautical-mile zone. Here the coastal state's sovereignty is already curtailed, because ships from all countries are allowed passage through these waters. In the exclusive economic zone

This zoning is fundamentally in conflict with any comprehensive sustainable ocean governance. Fish stocks can move across vast areas; toxic substances travel across national borders with sea currents and far beyond the bounds of an EEZ. And finally, as a consequence of climate change and particularly ocean acidification and sea-temperature rise, threats exist today which affect all marine areas equally, across all zones and borders.

Article 192 of the Convention on the Law of the Sea obliges all states parties to protect and conserve the marine environment. In addition, Article 192 ff. cites a list of obligations, setting out how states are to make use of resources in a sustainable and environmentally benign way and minimize marine pollution. Nevertheless, UNCLOS does not provide any unequivocal definition of

(EEZ) which extends up to 200 nautical miles from the coast, a coastal state has the sole right to explore and harvest living and non-living resources. It is thus permitted to exploit petroleum and natural gas, mineral resources or fish stocks. In the continental shelf zone, which is a natural extension of the mainland and can extend beyond the exclusive economic zone, it may explore and harvest resources on the sea floor. Adjacent to the exclusive economic zone is the area of the high seas.

sustainability or concrete environmental protection standards. It neither describes in detail how resources are to be used, nor can it determine, for example, catch quotas for fishery. The specifics of environmental protection are left to the individual states parties. This being the case, today it is commonplace for certain coastal states to neglect marine protection due to lack of political interest or lack of financial resources. A consistent global level of protection for the ocean has not been achieved to date.

Much the same applies to fishery in the international waters of the high seas. According to the standards set out in UNCLOS, fishery is regulated in most international marine zones by one of the RFMOs. Usually it is the coastal states of a sea region that are organized in these RFMOs, along with just a few larger fishery nations. For example, the members of the RFMO responsible for the Northeast Atlantic, the North East Atlantic Fisheries Commission (NEAFC), include the European Union, Iceland, Norway and the Russian Federation. Other nations which do not belong to the RFMO responsible for the given sea area are not actually allowed to fish in that area. Nevertheless, illegal fishing could be taking place in these areas almost undetected, since such misconduct is rarely sanctioned. Irrespective of all the regulation of fishery, this means that even fish stocks in RFMO areas can be overfished.

Too many institutions involved

A further reason why no comprehensive regime for sustainable ocean governance has yet been achieved is that different institutions are responsible for each of the various types of ocean use. At the highest political level, first of all, there are various institutions under the umbrella of the United Nations (UN) dealing with the various different use and protection aspects of the ocean; for example, the ISA headquartered in Kingston, Jamaica, and the International Maritime Organization (IMO) in London which lays down the rules for international commercial ship-ping. These are set out in international treaties, the conventions.

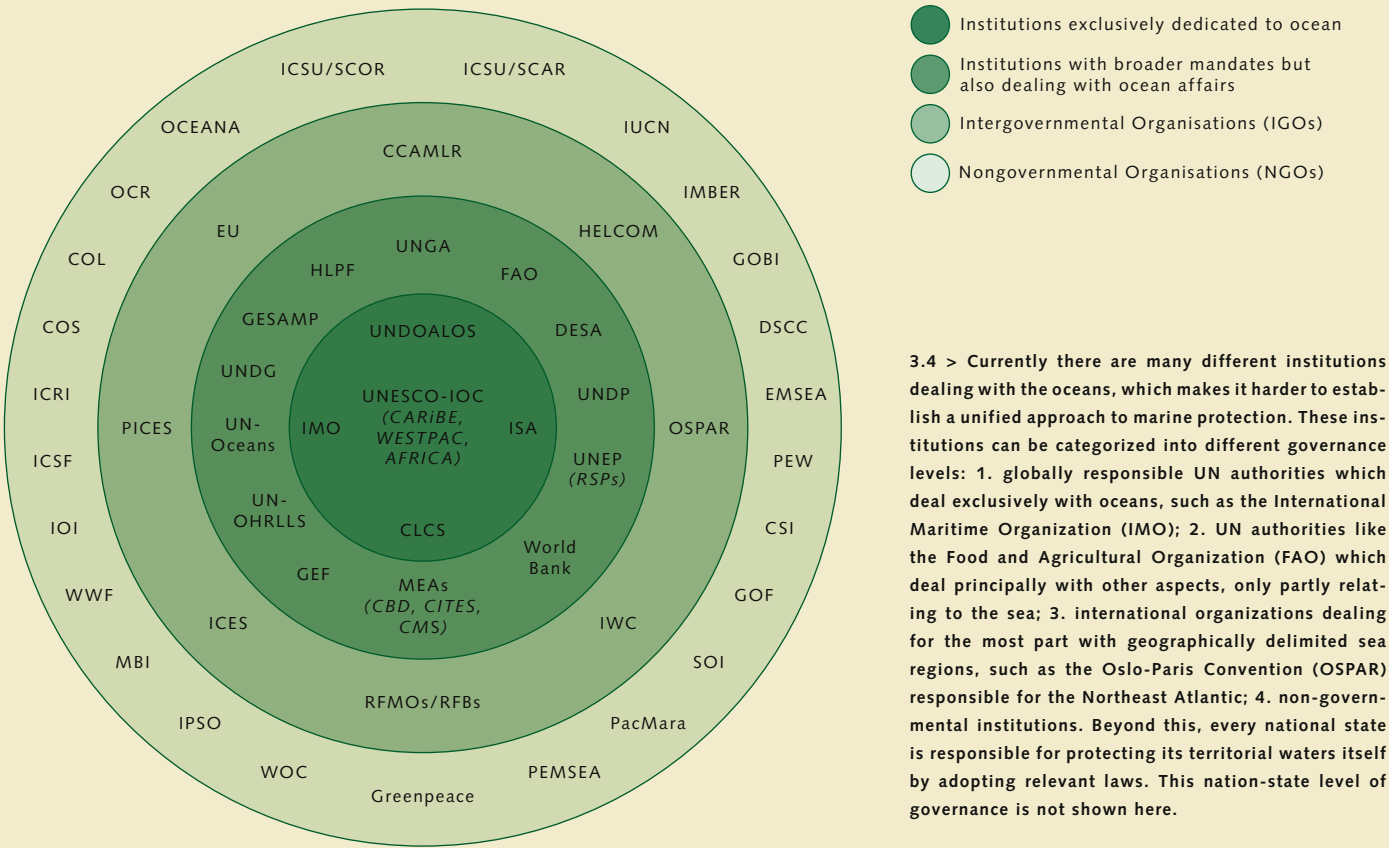
One example is the Ballast Water Management Convention. Ballast water is stored in special ships' tanks. Its



3.3 > A conference on the Convention on the Law of the Sea (UNCLOS), held in March 1982 at the United Nations in New York. UNCLOS is one of the largest legal regimes on ocean governance.

purpose is to keep ships stable when they are empty or lightly loaded. Depending on whether a ship in port is being loaded or unloaded, it will either pump ballast water into its tank or drain it back into the coastal waters. Along with this ballast water, in turn, marine organisms can be carried from one part of the world to another. If they become established there and suppress native species, this can change the nature of entire habitats. In order to combat the incursion of alien species, known as bio-invasion, under the terms of the convention, ballast water must be purified in future with special treatment plants on board ship.

The IMO also has the right, upon request from member states, to place Particularly Sensitive Sea Areas (PSSAs) under protection. These are areas where shipping is restricted or prohibited in order to protect important



3.4 > Currently there are many different institutions dealing with the oceans, which makes it harder to establish a unified approach to marine protection. These institutions can be categorized into different governance levels: 1. globally responsible UN authorities which deal exclusively with oceans, such as the International Maritime Organization (IMO); 2. UN authorities like the Food and Agricultural Organization (FAO) which deal principally with other aspects, only partly relating to the sea; 3. international organizations dealing for the most part with geographically delimited sea regions, such as the Oslo-Paris Convention (OSPAR) responsible for the Northeast Atlantic; 4. non-governmental institutions. Beyond this, every national state is responsible for protecting its territorial waters itself by adopting relevant laws. This nation-state level of governance is not shown here.

CBD Convention on Biological Diversity **CCAMLR** Commission for the Conservation of Antarctic Marine Living Resources **CITES** Convention on International Trade in Endangered Species of Wild Fauna and Flora **CLCS** Commission on the Limits of the Continental Shelf **CMS** Convention on Migratory Species **COL** Consortium for Ocean Leadership (NGO comprising various marine research institutions) **COS** Center for Oceans Solutions (professional training institution of various marine research institutions) **CSI** Cetacean Society International (NGO for the protection of whales) **DESA** Department of Economic and Social Affairs (of the UN) **DOALOS** Division for Ocean Affairs and the Law of the Sea **DSCC** Deep Sea Conservation Coalition **EMSEA** European Marine Science Educators Association **EU** European Union **FAO** Food and Agriculture Organization **GEF** Global Environment Facility **GESAMP** Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection **GOBI** Global Ocean Biodiversity Initiative **GOF** Global Ocean Forum **Greenpeace** NGO for protection of the natural environment **HELCOM** Helsinki Commission (inter-state commission for protection of the Baltic Sea) **HLPF** High-Level Political Forum on Sustainable Development (UN forum) **ICES** International Council for the Exploration of the Sea **ICRI** International Coral Reef Initiative **ICSF** International Collective in Support of Fishworkers **ICSU** International Council for Science **ICSU/SCOR** Scientific Committee on Oceanic Research **ICSU/SCAR** Scientific Committee on Antarctic Research **IMBER** Integrated Marine Biogeochemistry and Ecosystem Research **IMO** International Maritime Organization **IOC** Intergovernmental Oceanographic Commission (under the auspices of UNESCO) **IOC CARIBE** IOC Sub-Commission for the Caribbean and Adjacent Regions **IOC WESTPAC** IOC Sub-Commission for the Western Pacific **IOC AFRICA** IOC Sub-Commission for Africa and the Adjacent Island States **IOI** International Ocean Institute (NGO for the protection of the oceans) **IPSO** International Programme on the State of the Ocean **ISA** International Seabed Authority **IUCN** International Union for Conservation of Nature and Natural Resources **IWC** International Whaling Commission **MBI** Monaco Blue Initiative (NGO promoting the creation of marine protected areas) **MEA** Multilateral Environmental Agreement **OCR** Ocean Conservation Research (NGO for the abatement of ocean noise pollution) **OCEANA** NGO for the conservation of marine biodiversity **OSPAR** Oslo and Paris Convention (Convention on protection of the North-East Atlantic and the North Sea) **PacMara** Pacific Marine Analysis and Research Association **PEMSEA** Partnerships in Environmental Management for the Seas of East Asia **PICES** North Pacific Marine Science Organization **PEW Charitable Trusts** (independent non-profit foundation) **RFMOs** Regional Fisheries Management Organizations **RSP** Regional Seas Programmes **SOI** Sustainable Ocean Initiative **UN** United Nations **UNDG** UN Development Group **UNDP** UN Development Programme **UNEP** UN Environment Programme **UNESCO** UN Educational, Scientific and Cultural Organization **UNGA** United Nations General Assembly **UN-OHRLLS** UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States **UNSG** Secretary-General of the UN **WOC** World Ocean Council **WWF** World Wide Fund (NGO for nature conservation)

fishing grounds, whale breeding grounds or areas of ecological value.

Another example of a convention that was passed under the umbrella of the IMO is the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78). In Annex V, in force since 1988, it prescribes to shipping which wastes have to be collected on board. According to MARPOL, for instance, the disposal of left-over food may only take place outside the 12-nautical-mile zone. Plastic waste, on the other hand, may not be thrown overboard at all according to Annex III.

The examples show that with UN authorities like the IMO or ISA taking such sectoral responsibility, it is perfectly possible to attain individual marine protection goals. But at times, having governance subdivided into different

sectors can also be a hindrance. For example, no UN authority is currently able to place sea areas under complete protection – i.e. to impose protection which covers the sea floor, water column and fish stocks alike, which regulates shipping, and which prohibits other uses such as drilling for natural gas and petroleum.

Moreover, on a global level there are additional UN authorities whose tasks only partly encompass marine aspects. The United Nations Food and Agricultural Organization (FAO), for instance, records data on the condition of fish stocks worldwide. Over the years it has published numerous guidelines for responsible fisheries and sustainable fishing, but these are merely recommendations and in no way legally binding. Member states are left to decide for themselves whether or not to abide by them.



3.5 > Ballast water being pumped out in a harbour. Ballast water can transport bio-invasers from one ecosystem into another. Some of the organisms reproduce so prolifically in foreign waters that they suppress local species. The International Maritime Organization's International Ballast Water Management Convention therefore stipulates that ballast water must be purified in future.

The ground rules of international ocean governance

On the international level, the United Nations (UN) in particular and its various organs are currently responsible for ocean governance. The United Nations is an international organization of 193 countries with headquarters in New York. Among its most important tasks are safeguarding world peace, adherence to international law, protection of human rights and the promotion of international cooperation. Another of the objectives defined by the international community within the framework of the UN is, importantly, the protection and sustainable use of the ocean. The most important UN regime on the theme of the ocean is the Convention on the Law of the Sea (UNCLOS). UNCLOS is treated as a constitution for the oceans. It was passed by the UN in 1982 and entered into force in 1994. It sets out the international legal framework governing the principles for the use of marine resources and protection of the marine environment by law. UNCLOS forms the legal umbrella which overarches the work of all the UN organs dealing wholly or partly with the theme of the ocean.

One example of a UN institution governing parts of the ocean according to UNCLOS is the International Seabed Authority (ISA). The ISA regulates the exploration and mining of mineral resources (ores) on the seabeds of international waters. Under the terms of UNCLOS these resources in the high seas are the “common heritage of mankind”, which should benefit all states equally. Under UNCLOS, the ISA has the task of supervising the equitable distribution of these resources, and grants sea-mining licences accordingly. Beyond this it is responsible for guarding against any destruction of marine habitats on the sea floor as a result of sea mining. So far countries have only had rights to explore the sea floor. Then, from 2016, the first licences for mining can be granted. The ISA is acknowledged today as a successful example of the clearly regulated use of marine resources. Law scholars praise the fact that in setting up the ISA, for the first time in history humankind has succeeded in controlling the use of a resource before extraction commences.

Another example of functioning multinational ocean governance under the umbrella of the Convention on the Law of the Sea is the work of the International Maritime Organization (IMO). In the course of time the IMO has passed several conventions which regulate shipping throughout the world. These include conventions which contribute to maritime safety or are intended to protect the ocean against pollution from shipping. The safety of shipping is regulated by the 1974 International Convention for the Safety of Life at Sea (SOLAS). SOLAS stipulates, for example, how many lifeboats ship must have on board and how often these should be serviced. The International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), for its part, is intended to prevent marine pollution and particularly of coastal waters by shipping. MARPOL stipulates, for example, that in Special Areas it is prohibited to discharge liquid cargo or oil residues from the ship’s engine



3.6 > Endurance test of a rescue boat: under the SOLAS Convention, lifeboats must undergo certain checks. One of these is the drop test, where a fully-loaded lifeboat is dropped into the water from a height of several metres.

(spent oil) into the sea. These Special Areas include the Baltic Sea, the Mediterranean and the Black Sea, among others. In the waters of the high seas, however, tank cleaning is permitted under the terms of MARPOL. Ships’ masters must comply with MARPOL by recording in oil logs precisely where and how they have disposed of anything.

Every coastal state oversees compliance with the standards of the IMO conventions for itself. For instance, the local port authorities of any country are permitted to check all ships for compliance with the SOLAS or MARPOL rules. If a ship’s master breaches the regulation, a ship can be detained in harbour. As a result of this mechanism known as port state control (PSC), today most ship-owners comply with the rules of the IMO conventions. Shipping companies who flout them are placed on blacklists, and their ships subjected to especially thorough scrutiny. That said, the specifics of how strictly ships are inspected differ from country to country. Australia, South Africa, the USA, the Member States of the EU and the countries of South America take these checks very seriously nowadays.

Port state control not only checks compliance with the IMO standards but also with the provisions of other UN organs, such as the International Labour Organization (ILO), for example. The ILO, based in Geneva, is responsible for employees in a wide range of occupational fields worldwide, and its work includes representing the rights of mariners. Since many mariners had a long history of poor working conditions, due to factors like low pay, long working hours and a lack of social benefits, in 2006 the ILO passed the Consolidated Maritime Labour Convention, which entered into force in 2013. It sets out international minimum standards for the working conditions of mariners. Its aim is to prevent workers from being exploited. In Germany, compliance with this convention is verified during port state control by the trade supervision office or the public health office. In other words, during the port state control, staff from different state authorities may well be in attendance.

Multinational governance can even work when individual states end up in conflict with each other. Disputes between countries over sea borders, for example, have arisen in the past and will arise time and time again; in other cases, ships are detained for various reasons. A well-known example is the case of the *Arctic Sunrise*. In 2013 this ship belonging to the environmental organization Greenpeace and sailing under the Netherlands flag was detained with all its crew by Russian border security. Previously staff of the organization had boarded the oil platform of the Russian energy group Gazprom to protest against oil drilling in the Arctic. Russia accused the activists of piracy. The Netherlands lodged a demand for Russia to release the ship and its crew.

In cases like this, the two countries can have their dispute heard in court. In this regard they have a choice of options. They can either take their case to the International Court of Justice (ICJ) of the United Nations in The Hague, which also negotiates marine law disputes. Or they can invoke the International Tribunal for the Law of the Sea (ITLOS) in Hamburg, which was founded within the framework of the Convention on the Law of the Sea in 1996, specifically for disputes with a bearing on the ocean. 23 cases have been dealt with at ITLOS to date, one such case being that of the *Arctic Sunrise*. ITLOS came to the conclusion in November 2013 that the accusation of piracy was untenable, and ordered Russia to release the ship. Russia was slow to respond. Initially, crew members were set free one by one over a period of several weeks. Finally, Russia also released the ship.

In principle, countries can only take a case before ITLOS if both parties have ratified UNCLOS, which was applicable in the case of the *Arctic Sunrise*. Russia’s release of the ship and crew was also attributable to strong public pressure, say legal scholars. According to the experts’ opinion, it is especially difficult for the global superpowers to submit to independently administered justice and an international legal regime. Unlike Russia and China, the USA has not ratified UNCLOS to

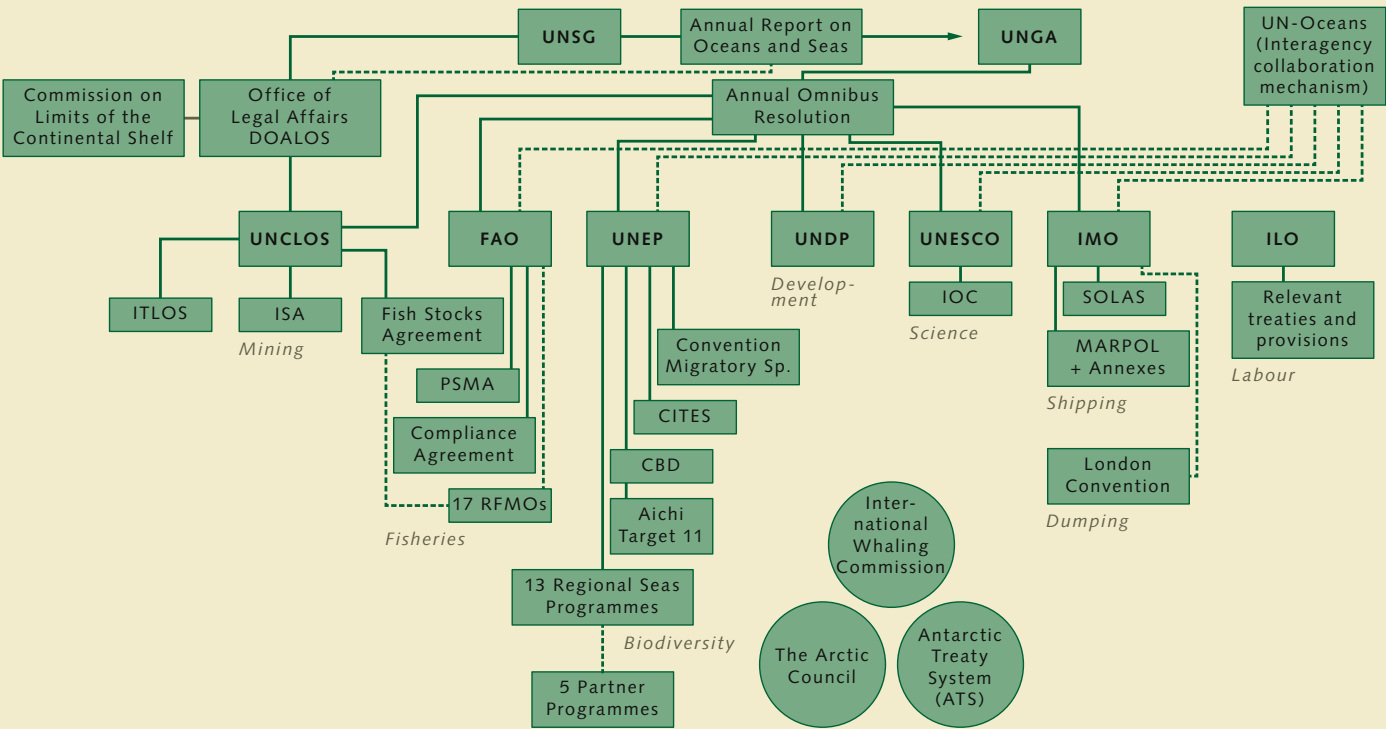
this day – with the consequence that it only has a weak voice in matters relating to the law of the sea.

Although there are international bodies such as the ICJ and the ITLOS which can settle disputes with a bearing on the ocean, ultimately there is no authority which could enforce the law with finality. Even if a country that has ratified the UNCLOS is sentenced by ITLOS, it can refuse to accept the judgement. In such a case pressure can only be exerted on the country through political and diplomatic channels. Therefore experts in the law of the sea consider UNCLOS and ITLOS to be an international regime with some weaknesses.



3.7 > The International Tribunal for the Law of the Sea (ITLOS) has its seat in the Hanseatic city of Hamburg. The institution was founded in 1996.

Ocean governance in a wide arena



3.8 > At the level of the United Nations alone, many organizations are wholly or partially involved with aspects of the ocean. Solid lines indicate direct dependencies between bodies and international agreements. Dashed lines indicate functional links. Intergovernmental organizations that do not directly form part of the UN system (such as the International Whaling Commission) are shown separately. “Aichi Target 11” refers to the goal adopted at the biodiversity conference in Aichi, Japan, of assigning protected status to 10 per cent of marine areas by the year 2020.

Today many institutions under the umbrella of the UN are dealing with the aspect of ocean governance. The most important regime is the UN Convention on the Law of the Sea (UNCLOS) which sets out the international ground rules for marine policy. Under the umbrella of the UN and UNCLOS, responsibilities in the marine context can be roughly broken down into the areas of labour law, biodiversity, development (particularly in developing countries and emerging economies), fisheries, sea mining, shipping and science. The standards of the responsible UN bodies or of the respective international agreements are not all legally binding to the same degree. UNCLOS requires member states of the UN to protect the sea but leaves it to them to transpose marine protection into national laws. The rules of the IMO for shipping, in contrast, are binding and can be enforced in the event of a breach. Ships can also be reined in if ships’ masters circumvent IMO regulations. In many other cases, however, there is no means of sanctioning misconduct. One

example is the Convention on Biological Diversity (CBD), which entered into force in 1993 and today has 196 parties. It has three objectives: conservation of biodiversity; sustainable use of the components of biodiversity; and fair and equitable sharing of the benefits arising from the use of genetic resources. The difficulty surrounding implementation of this convention is that the CBD is viewed as a framework agreement with general objectives. Unlike UNCLOS, the ISA or the IMO, there are no administrative structures for the CBD. There is not even a headquarters with its own administration, but merely conferences at which goals are defined. In accordance with the CBD, signatory states and groups of states like the EU have to enshrine the CBD goals in their respective legislation. However, the convention lacks clear criteria, limit values, sanction measures or deadlines. The upshot of all this is that so far many nations have no comprehensive strategies for the protection of biodiversity – either on land or in the ocean.

Agreements safeguard particular interests

On the regional level, too, the sectoral view of the ocean is predominant. Thus there are almost 600 agreements in existence today which have been passed by multiple states and which regulate the use or protection of the ocean in a delimited region. Examples are the “Agreement between the Government of the Russian Federation and the Republic Poland Government about cooperation in pollution abatement of the Baltic Sea, including the Kaliningrad (Vislinsky) Gulf, by oil and other harmful substances” or the “Agreement on Fisheries between the Government of Australia and the Government of Japan concerning Japanese Tuna Long Line Fishing”. The large number of agreements does not necessarily constitute evidence of any comprehensive regional marine protection or sustainable ocean governance regime. It much rather underlines that many states pursue particular interests, which have been safeguarded over the course of time by means of agreements tailored to that purpose.

How states cooperate on regional marine protection

Regional Seas Programmes (RSP) are another mechanism of particular significance for regional ocean governance. These are programmes in which the coastal states of particular sea regions have joined forces to improve marine protection in their region. The nature of the cooperation and the protection objectives are usually set down in regional agreements. These programmes were initiated in the 1970s by the United Nations Environment Programme (UNEP). Today there are 13 Regional Seas Programmes in which 143 countries participate. Their focus is on the following 18 sea regions: Antarctica, the Arabian-Persian region, the Arctic, the Caribbean, the Caspian Sea, the Mediterranean, the Northeast Atlantic, the Northeast Pacific, the Northwest Pacific, East Africa, East Asia, the Baltic Sea, the Pacific, the Red Sea and the Gulf of Aden, the Black Sea, South Asia, the Southeast Pacific and West Africa.

In the view of experts worldwide, however, there have been only a few positive examples of good ocean

governance to date within the framework of the Regional Seas Programmes. These include the Helsinki Commission (HELCOM) which is responsible for the protection of the Baltic Sea, and the Oslo-Paris Convention (OSPAR) which covers the North Sea and the Northeast Atlantic. Membership of OSPAR consists of several western and northern European countries, including the European Union, which have reached agreement to coordinate their marine protection efforts in the region of Biscay, the North Sea and the Northeast Atlantic through the OSPAR office in London.

Under the auspices of OSPAR, progress has been made in areas such as designating areas of the high seas as marine protected areas (MPAs) even though these are located outside the exclusive economic zones of the OSPAR contracting parties. One example is the Charlie Gibbs MPA, a highly species-rich deep-sea habitat located in the Atlantic between Iceland and the Azores. Experts had feared that this habitat could be destroyed by sea-floor trawl fishing with drag nets. OSPAR and NEAFC, the regional fisheries management organization responsible for the sea region, came to an agreement to comply with the FAO guidelines on sea-floor fishing. Among other provisions, these require the complete cessation of sea-floor fishing in areas of ecological significance such as species-rich **seamounts** or communities of cold-water corals or sponges. In this way the Charlie Gibbs MPA was protected from future sea-floor fishing in accordance with the FAO guidelines. But in the water column above it, fish may still be caught as before. It is problematic that member states which do not belong to the corresponding RFMO, in this case the NEAFC, cannot be obliged to respect a MPA like the Charlie Gibbs Area. This makes it quite conceivable that ships from other countries might carry on sea-floor fishing in a MPA. Thanks to aerial and space surveillance and the automatic ship recognition system (Automatic Identification System, AIS) whereby a transmitter on board reports ships’ data, e.g. name and position, fishery vessels in foreign waters can nevertheless be detected. For the Charlie Gibbs area an environmental protection organization has set itself the task of using AIS to monitor shipping activity.

Charlie Gibbs Marine Protection Area
The Charlie Gibbs Marine Protection Area is located on what is known as the Mid-Atlantic Ridge. It is a location where continental plates are drift-ing apart from each other so that magma from the Earth’s core repeatedly flows into the sea. As a result, mountainous structures on the sea floor grow up over time and form a ridge. Individual sections of this ridge are referred to as fracture zones. Fracture zones are normally named after the research ships that studied them. In the case of the Charlie Gibbs Marine Protection Area, it was the *Josiah Willard Gibbs* which spent an extended stay in the area in 1968. The affix “Charlie” comes from the nearby weather station of the same name.

3.9 > The Charlie Gibbs Marine Protection Area in the Atlantic is populated by many bizarre deep-sea creatures like this acorn worm (*Yoda purpurata*). The area is special because it is one of the few protected areas in international waters.



Gratifyingly, on the evidence so far, the area is obviously being respected by all nations. Ships engaging in sea-floor trawling have not been detected.

But another example demonstrates that the negotiation partners do not reach consensus in every case. In the Atlantic there are other areas of ecological value apart from Charlie Gibbs, which have unilaterally been declared MPAs by OSPAR but are not accepted by all NEAFC member states; one such area is the Josephine Seamount, which is located southwest of Portugal's EEZ. Portugal is laying claim to the continental shelf beyond its EEZ and accordingly wishes to extend its mineral extraction rights to 350 nautical miles offshore – out beyond the Josephine Seamount area. For cases like this, the NEAFC regulation makes provision to grant the affected coastal state fishery rights in its continental shelf area – although the continental shelf provision pursuant to UNCLOS has nothing whatever to do with fishery but relates exclusively to mineral resources. On that basis, Portugal may carry on fishery with long lines in this case. During internal negotiations within the NEAFC over the establishment of a MPA at the Josephine Seamount, Portugal predictably expressed its opposition. Since other member countries had abstained in the last negotiations, there is currently no majority within the NEAFC in favour of the MPA. Consequently other countries have continued to engage in sea-floor trawling in the area. The most recent sightings were of Spanish and Latvian ships.

Charlie Gibbs thus remains one of the few examples in the world of successful marine protection within the framework of the Regional Seas Programmes. In other cases, marine protection failed due to a lack of cooperation among states or because it was not made the foremost priority. One example is the Abidjan Convention responsible for the African Atlantic coast between Mauritania and South Africa, which entered into force in 1984. Due in no small part to civil wars in Côte d'Ivoire, Liberia and Sierra Leone as well as a lack of technical equipment and money, little progress has been made towards marine protection objectives since the convention took force. For some years, however, the member countries of the Abidjan Convention have been stepping up their efforts to

Marine protected areas – not enough for large-scale protection

Marine protected areas (MPAs) are an instrument for placing particular areas under protection. MPAs can be established both in international and in territorial waters of coastal states. Generally they are used to pursue individual protection objectives. Thus the establishment of a MPA does not mean that the sea area may no longer be used at all and is protected in every respect. MPAs are designated, for example, for the purpose of allowing overfished fish stocks to recover. In other cases, trawl fishing is prohibited in order to conserve sensitive habitats on the sea floor. But in the water column above it, fishing continues to be allowed. So most MPAs do not give comprehensive protection from the sea floor to the water surface. Shipping in a sea area cannot be restricted indiscriminately, for example, because freedom of shipping is applicable in international waters and in the exclusive economic zones. Currently all MPAs have a total area of around 12 million square kilometres, which amounts to just 3.4 per cent of the global ocean surface. Of the area classified as high seas, just one per cent of the ocean surface enjoys MPA protection. On this evidence, humankind is still far from the conservation goal set by the United Nations at the biodiversity conference in Nagoya, Japan, in 2010: there it was agreed that at least 10 per cent of the global ocean surface should be placed under protection by the year 2020.

National states can designate MPAs for their own waters. In order to establish a MPA in international waters, on the other hand, the countries which make use of the sea area must reach agreement on the common protection objective, as in the case of the NEAFC and the Charlie Gibbs area. In a few cases to date, this has delayed or completely blocked the designation of MPAs. In the opinion of experts, there are too few protected areas at present. Moreover, the few that exist are often very isolated from one another. In keeping with the principles of species and habitat conservation, it would make more sense to link protected areas in a trans-regional network because many species meriting protection are often wide-ranging in their distribution.

revitalize marine protection. A first step is to identify, and systematically to document, sensitive and protection-worthy areas of the sea. This applies particularly to a large sea area which was defined in the Abidjan Convention as a Large Marine Ecosystem (LME) and extends beyond the EEZs of several West African countries. This area, the Canary Current Large Marine Ecosystem (CCLME), is especially productive because it is where the Canary Current upwells nutrients from the deep sea to the water

Large Marine Ecosystems

To improve the protection of transboundary coastal regions, the US National Oceanic and Atmospheric Administration (NOAA) developed the concept of large marine ecosystems (LMEs) in the 1990s. The Earth's coastal sea areas were divided up into 64 LMEs. Each LME is characterized by typical flora and fauna. Many LMEs are especially productive, being supplied with plentiful nutrients by rivers or upwelling currents. These produce 95 per cent of global fish biomass. The LME concept takes account of socio-economic as well as biological aspects.

surface. Accordingly there are high levels of algal growth, high primary production, and large quantities of zooplankton and fish. A first step towards protection of the CCLME is to make detailed maps of the area with all its habitats. To this end, in a workshop organized by the Abidjan Convention, staff were trained in geo-information systems (GIS). Beyond this, the convention supports the member countries in which oil is drilled to produce sensitivity maps. These record how sensitively particular coastal areas react to oil pollution incidents. In the case of an oil spill, these could be used to help relief workers protect areas of particular value with oil booms.

East Asia – hotspot of environmental degradation or of marine protection?

Under the umbrella of the United Nations Development Programme (UNDP), too, regional marine protection initiatives involving multiple countries have been brought into being over the years. Covering the East Asian region, for example, is PEMSEA (Partnerships in Environmental Management for the Seas of East Asia). PEMSEA is classified as a non-governmental organization but is a large network in which very different stakeholder representatives and institutions cooperate: representatives of national governments or local administrations, companies, educational establishments, research institutions and sponsors. The PEMSEA area extends from Thailand across Indonesia and the Philippines to the coasts of China and Japan. Within this vast expanse there are five major sea areas which are of both ecological and economic significance: the East China Sea, the Yellow Sea, the South China Sea, the Sulu and Celebes Sea and the waters around Indonesia. According to PEMSEA data around 1.5 billion people in this region live within a 100-kilometre distance of the coast. Parts of this region have undergone impressive economic development in recent years. Others, however, are plagued by deep poverty. PEMSEA considers the main threats to the marine environment to be marine pollution with plastic waste and effluents from rivers, municipalities and industry, but also nutrients from agriculture. Added to this are the issues of overfishing, destruction

of coastal wetlands by building projects, and careless fishery with resultant damage to sea-floor habitats such as coral reefs.

Especially affected are industrialized and densely populated ocean bights and straits, where access to the open sea is constrained so that water can only be exchanged slowly. These include the approximately 400-kilometre-long Bohai Bay, a coastal location surrounded by several urban centres and adjacent to Beijing; the approximately 50-kilometre wide Manila Bay off the Philippines' principal island of Luzon; and the narrow Malacca Strait between Malaysia and the Indonesian island of Sumatra. Within the PEMSEA network there are very different approaches aiming to improve marine protection in these three regions and in other areas as well. The Bohai Bay region, which is already extremely industrialized today, is primarily threatened by pollutants and nutrients transported from the hinterland by around 40 rivers. Pollution in the region is to be reduced by constructing large purification plants. Another problem in the Bohai Bay is the loss of wetland areas in the estuary delta of the Yellow River due to the construction of tourist amenities, residential settlements, industrial areas and large aquaculture facilities.

Likewise, the Bay of Manila is surrounded by heavily industrialized and densely settled areas. Moreover, tourism and fishery are important branches of the economy. As in the Bohai Bay, water pollution and the destruction of coastal habitats are the key problems. Within the framework of PEMSEA, a strategy for Integrated Coastal Zone Management (ICZM) for the Bay of Manila is currently being developed. ICZM is based on a concept that many countries worldwide have been pursuing for some years now. It sets out to reconcile the different interests that exist in a coastal area. The goal is to bring the use of the sea and the conservation of nature into harmony as far as possible by weighing up and offsetting environmental protection, the needs of the population and the interests of business people against one another. Such strategies are elaborated by individual states in many cases. In the case of PEMSEA, however, efforts are definitely geared towards joint ICZM; for example, by bringing partners from very different nations together in workshops.



3.10 > The densely settled and, in places, heavily industrialized Bay of Manila is one of the most severely polluted regions of the Philippines. Plastic detritus is the most striking sign of sea pollution in this coastal area.

Special value is also placed on the education of the population. In the workshops, for example, training is being provided to teachers, coastguard staff and press workers in informing the population about the correct way to deal with waste, which is frequently still being thrown into the sea at present. Depending on the local circumstances, the focuses of marine protection may well vary. In the Bay of Manila, projects are currently planned on the reforestation of mangroves and the establishment of protected areas for fish and turtles.

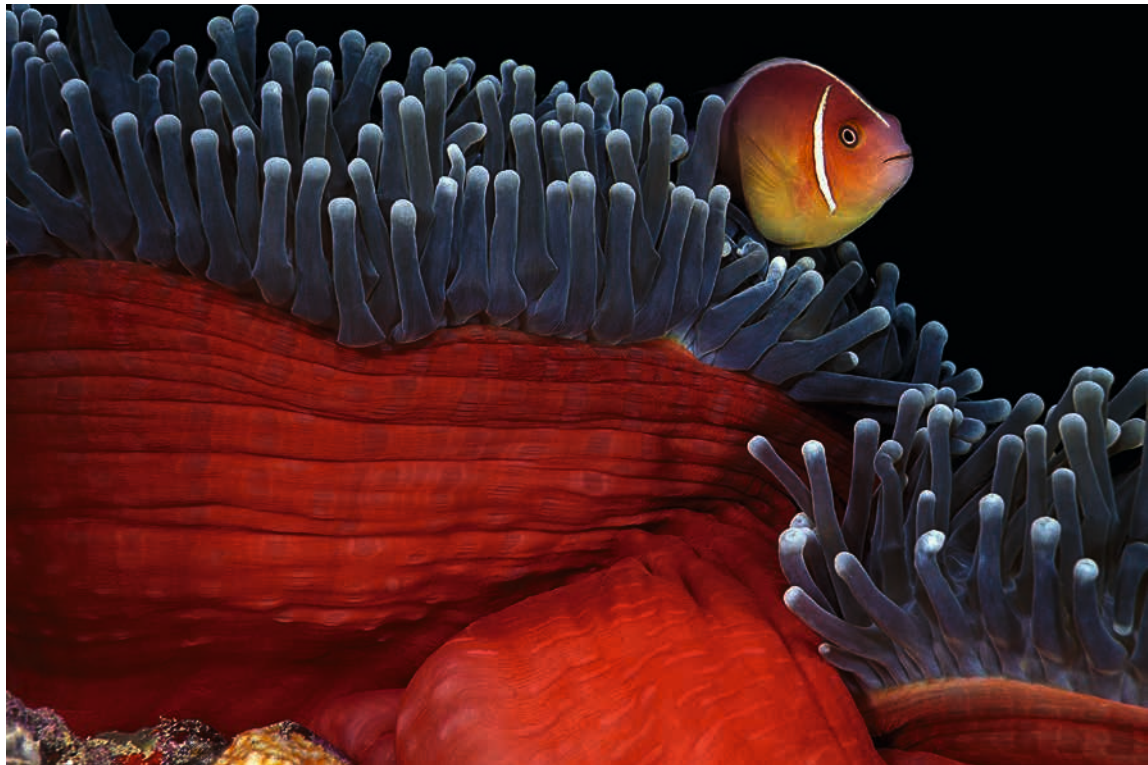
How successfully PEMSEA works in reality in the different regions will remain to be seen in years to come. A crucial aspect by any standard is whether China, as the largest and most powerful economic power in the region, is willing and able to practise marine environmental protection.

Nation states themselves determine the fate of their territorial waters

Alongside these regional forms, of course, ocean governance also takes place on a nation-state level. This generally extends to the territorial sea of a country, and to its exclusive economic zone, for according to UNCLOS every individual state is to enshrine marine protection in its national constitution by means of laws. It is clear from comparisons of different coastal areas in the world that marine protection enjoys a very different status from one country to another despite national environmental laws.

In 2004, for instance, Australia established a fishery exclusion zone around the Great Barrier Reef, the coral reef along the northeast coast of Australia, in order to protect shrinking fish stocks. This “no-take zone” (NTZ) with

3.11 > A major part of Australia’s Great Barrier Reef is closed to fisheries. The aim of this is to protect its native organisms such as the Pink Anemonefish *Amphiprion perideraion*.



an area of 115 000 square kilometres is one of the largest worldwide. Although it caused profits from fishery to fall, many fish stocks had recovered just two years after the ban and, according to scientific analyses, economic benefits have accrued to tourism because the region has become more interesting for divers, for example. Nevertheless, even established protected areas like that of the Great Barrier Reef can find themselves at risk. It so happens that with support from the current Australian government, preparations are being made for the building of a coal port. The silt produced by the excavations will be dumped in the vicinity of the reef. Conservationists are up in arms about this plan.

According to a study, especially heavy pollution is found in the coastal waters off the East African coast, such as the sea area off the Tanzanian capital of Dar es Salaam. The study shows that the waters are polluted in particular with bacteria from faecal matter, with nutrients from agriculture (crop production, livestock rearing and feed production) and with metals and long-lived (persistent) pol-

lutants from the chemicals industry. Indeed, 80 per cent of Tanzania’s industrial plants are concentrated in Dar es Salaam, including metal processing and battery, glass and paper factories, which mostly discharge their effluents unpurified. Since there are no modern purification facilities in Dar es Salaam, bacterial impurities and contaminants usually find their way directly from sewerage pipes into the sea. According to a study by Tanzanian marine researchers, the seafood there was inedible and the coastal waters downstream of the effluents were unsuitable for bathing. Regardless of this, some beaches in the area are still used by tourists. Although there are various infiltration basins in the city which collect wastewater and allow sewage sludge to settle, these are poorly sealed, with the result that polluted water penetrates the soil and simply drains away. Moreover, the existing capacities fall short by some margin for the city which has grown drastically in recent decades. Between 1985 and 2010 alone, the population doubled. In 2012 the population grew by 6.7 per cent from the previous year.

A tool kit for good governance

Many countries are a very long way from practising good ocean governance and sustainable use of their sea areas. The separation between different sectors and domains of competence and between the global, international and national levels makes it all the more difficult to join forces and comprehensively protect the marine environment. To accomplish good ocean governance, the following criteria – which are applicable to all domains of competence and on all levels in equal measure – should be satisfied:

SYSTEMIC APPROACH: Up until now, various marine aspects have been considered separately from each other. Economic objectives such as fishery, the construction of port and industry facilities or hotels are pursued without regard to the consequences for the environment or the needs of the coastal population. The systemic approach, on the other hand, takes into consideration that economic, social and environmental aspects are closely interwoven in one system. It also honours the fact that habitats are very complex structures in which many animal species are interconnected in food webs. Whereas past thinking about the use of ecosystem services often only considered individual organisms, today efforts are made to take a view of the ecosystem as a whole. In fisheries, for example, for a long time only the population sizes of individual fish species were of interest. In future, fishing shall increasingly be managed with prudent regard for the ecosystem as a whole. An example of this is to refrain from using heavy fishing gear that damages the sea floor.

PRECAUTIONARY APPROACH: In many cases, scientists today cannot say with certainty how severely endangered an animal species or habitat is or, for example, how dangerous a chemical substance is. According to the precautionary approach, humans should act with foresight. One example is overfishing. Fishery researchers cannot count fish. They have to make use of sample catches and mathematical models to estimate the size of a fish population. For this reason, according to the precautionary approach they recommend setting catch quotas cautiously

in order to prevent such severe reduction of a fish population that it no longer produces enough offspring and succumbs to overfishing. Furthermore, researchers recommend reducing the emission or use of chemicals even if the substances are only suspected of being harmful to living organisms.

ADAPTIVE MANAGEMENT: The biological, biochemical and physical processes in the sea are so complex that so far scientists have only gained a partial understanding of them. Equally, the changes that will occur in the wake of climate change are virtually impossible for scientists to envision today. Further research will bring new insights which must also be taken into account in future as part of ocean governance. It must therefore be shaped so as to be adaptable in the light of new scientific findings.

TRANSPARENT INFORMATION: Scientists have conducted numerous marine research studies and pulled together thousands of facts to date. So far it has been extremely difficult to access much of this data because it has not been recorded centrally but stored in the offices or labs of individual researchers and thus widely dispersed. Often, too, data disappears in the files once projects have run their course. It is therefore a prerequisite for good ocean governance and, in particular, adaptive management that scientific findings are made rapidly accessible to the public and to policymakers. How this can work is demonstrated by the Marine Strategy Framework Directive (MSFD), the current marine protection strategy of the European Union (EU). This obliges the authorities of the EU Member States to make all data on the condition of the sea in their exclusive economic zones generally accessible on Internet portals by 2020. Thus, in future it will take just a few clicks to be able to compare data on different environmental parameters from different years – on degradation of the sea floor by fisheries, on species diversity in certain European sea areas, or on the pollutant load of the waters. Environmental policy decisions and measures can be taken on a sounder basis. Applications to carry out construction projects in the sea, such as installing offshore wind farms, can be processed more quickly; not least,

because the competent authorities can more easily ascertain whether particularly sensitive or protection-worthy sea areas are affected.

CLEAR ALLOCATION OF USAGE RIGHTS: To prevent overuse of the collective resource of the sea, because many countries as well as corporations exploit it excessively, ocean governance should ensure that usage rights are clearly distributed. In certain circumstances, this also involves excluding potential users. One example is the allocation of fishery rights by one of the Regional Fisheries Management Organizations (RFMO). These regulate fishery in a sea area and ensure that catch quotas are distributed among member states. Other nations at greater distances from the corresponding areas do not normally receive permission to fish. The aim of this is to prevent fish stocks in international waters – which are marine commons – from being overfished.

GLOBAL COOPERATION MECHANISMS: The sea cannot be confined by borders. Many problems cut across borders or even have a global dimension, as the phenomena of ocean warming and acidification show. Ocean governance can only work well if the interests of the many private, state, local or regional institutions and stakeholder groups can successfully be reconciled with each other. One precondition for this is that global regimes define marine protection goals more clearly than is the case today, for instance in UNCLOS. On the other hand, these regimes must be broadly framed and flexible enough to be applicable to different sea regions.

SUBSIDIARY AND PARTICIPATORY DECISION-MAKING STRUCTURES: According to the systemic approach, all interests should be given due consideration in order to gain the consent of all parties involved and to increase the acceptance of any decision. Marine protection is a global challenge. Nevertheless, the interests of the local people in the various coastal regions must be taken into account, too. Marine protection works well in situ if the people can see the logic of the protection idea. This is particularly important when it results in curtailment of the population's

usage rights. Fishers who earn a living from local fishery, for example, should have a say in what practices should be adopted to protect coral reefs – such as avoiding shallow areas in order to prevent destruction caused by boats, or refraining from dropping anchor. By the same token, they can help to determine what constitutes alternative employment of equal value in the event that fishery should be prohibited entirely for the protection of the corals.

INCENTIVES FOR INNOVATIONS: In keeping with sustainable ocean governance, entrepreneurs or other stakeholder groups should be rewarded for making sustainable use of marine ecosystems and developing corresponding business models for the prudent use of the sea. In addition, development programmes should promote research, education and technology aligned with marine protection objectives. Particularly in developing countries, marine protection could be advanced by transferring knowledge and sustainable technologies.

FAIR DISTRIBUTION MECHANISMS: Both profits from the use of marine ecosystem services and the costs of protecting the marine environment should be distributed equitably. This would prevent individual stakeholder groups from capitalizing on exploitation of the marine commons. Equally, the costs of monitoring the environmental status of the ocean should be borne collectively by the various users. This distribution of costs and benefits should take place at all levels of ocean governance, both between different countries and between the different population groups within a country. Ultimately, intergenerational distributive justice should also be taken into consideration, so that all ecosystem services will remain available to future generations without restriction.

CONFLICT RESOLUTION MECHANISMS: Conflict resolution mechanisms are necessary in order to reconcile the diverse interests of different users. In this process, ocean governance should offer mechanisms for solving conflicts both between states and within individual countries. Nowadays there are many examples of individual stakeholder groups within countries exploiting natural capital

3.12 > Wind farms in the sea can make a substantial contribution to the electricity supply. Before they are constructed, though, sites should always be assessed to ensure that sensitive marine habitats will not be destroyed.



while sizeable population groups are left empty-handed. This is happening in oil-rich Nigeria, for example. The crux of the problem is that the Nigerian government does not distribute the profits from the oil business equitably. It negotiates cooperation agreements and drilling licences with multinational oil corporations and receives annual revenues amounting to billions. Despite the existence of a distribution ratio whereby the dollar profits are supposed to be shared out between the national budget, regional governments and local administrations, very little money flows back to the drilling regions. Experts attribute this to the high prevalence of corruption at the top level of the administration. An additional factor is that ownership of any land-holdings where oil is found is automatically assigned to the national authorities under the Land Use Act of 1978. Communities or private owners are not normally compensated.

SANCTION MECHANISMS: To ensure that all parties abide by the agreed rules, instruments must be introduced at every level of ocean governance, i.e. on the local, regional and global levels, with which misconduct can actually be sanctioned. This provides a means of enforcing compliance with usage rights, for example. Sanctions can actually be a highly effective instrument of governance, as is

demonstrated by the surveillance flights that are used in certain sea areas to spot incidents of oil pollution. Under the terms of the International Convention for the Prevention of Pollution from Ships (MARPOL), since the beginning of the 1980s, seven sea regions worldwide have been defined as Special Areas (protected areas) in which the discharge of oil from ships is prohibited. In several of these Special Areas, such as the Mediterranean, the North Sea and the Baltic Sea, surveillance flights have been carried out for many years. Since patches of oil pollution can be identified very effectively by aerial photography with special cameras, ships whose crews have cleaned their tanks at sea or jettisoned oil can swiftly be caught. Because perpetrators of illegal pollution within Special Areas can be pursued by means of criminal law, the flights have a deterrent effect: the number of illegal discharges has dropped substantially.

These general criteria for good ocean governance represent the ideal state of affairs. The first step towards comprehensive sustainable ocean governance is therefore to appraise the different levels with a view to determining how far they do or do not meet these criteria. For now, the one certainty is that there are many points where further improvement is essential.



3.13 > According to the MARPOL agreement ships’ masters are forbidden to drain oil residues into the water in Special Areas like the North Sea. In the German Bight the coastguard uses planes and boats to hunt down illegal oil polluters.

CONCLUSION

The ideal of good marine policy

The protection and sustainable use of the ocean are, first and foremost, a political task. Each aspect must be enshrined in both international conventions and national laws, and followed through with measures to ensure compliance. “Good ocean governance” of this kind is difficult because a host of different institutions are responsible for the ocean and its protection; furthermore, the sea is subdivided into individual zones. For instance, UNCLOS contains the categories of territorial sea, which is part of a coastal state’s sovereign territory; the exclusive economic zone in which a coastal state alone has the right to exploit resources and fish stocks; and the high seas, which are open to all countries for use with certain restrictions. This zoning is fundamentally in conflict with comprehensive sustainable governance of the ocean. Fish stocks move across vast areas, toxic substances are washed across national borders by the sea currents, and phenomena like ocean acidification and ocean warming pose a threat to all sea areas in equal measure.

The fact that different institutions are responsible for different types and sectors of sea use is an additional complication for sustainable governance. At the highest political level, several different United Nations institutions are dealing concurrently with different aspects of the ocean. For instance, the International Maritime Organization (IMO) lays down the rules for international commercial shipping, and the International Seabed Authority (ISA) exclusively administers the mineral resources located in high-seas areas. In addition to these, there are major UN bodies whose tasks only partially comprise particular marine aspects.

On the regional level, too, the sectoral view of the ocean currently predominates. Today almost

600 agreements are in existence which have been adopted by multiple states and which regulate particular uses in a delimited region. This large number notwithstanding, there are very few positive examples of really effective regional ocean governance.

In other cases, marine protection fails due to poor cohesion among the states. One example is the Abidjan Convention, which governs the African Atlantic coast between Mauritania and South Africa and entered into force in 1984. Due in no small part to civil wars in Côte d’Ivoire, Liberia and Sierra Leone as well as a lack of technical equipment and funds, little progress has been made towards marine protection objectives since the convention came into force. For a few years, however, the member states have been endeavouring to revitalize marine protection.

Despite the many obstacles, there are certainly examples of functioning ocean governance: for instance, port state control (PSC) was introduced in order to verify compliance with certain UN conventions. This allows a country’s port authorities to detain a ship in harbour if a ship’s master commits any breach of international regulations. Today, disputes between two states can often be resolved successfully in an international arena. Countries can take their cases to the International Court of Justice (ICJ) of the United Nations or to the International Tribunal for the Law of the Sea (ITLOS). Many cases revolve around violations of marine borders. However, even if a country is sentenced by ITLOS, it can refuse to accept the judgement. In that case, all that usually remains as a last resort is to exert additional pressure through diplomatic channels. For this reason, experts in the law of the sea view the ICJ and ITLOS as an international regulatory apparatus with significant weaknesses.