Dr. Helge Wendenburg

Our challenge – Prevention and Management of Marine Litter

Ladies and gentlemen,
Esteemed colleagues,

As someone who grew up in the coastal resort of Husum, marine conservation is a topic particularly close to my heart. To this day, whenever I visit my home town, I seize every opportunity to walk on the beach and enjoy the sensation of sun and salt on my skin and take in the vast expanse of the sea. However, over the decades, our oceans have taken on new and additional "duties": they have become an ever more intensively utilised economic space, particularly for fishing, shipping and tourism, both at the shore and on the water. Parallel to these changes in our perceptions of the sea, I have also observed changes in my home town's beaches.
Whereas in the past, one might have encountered the odd piece of litter, today there are all manner of different items. Chunks of polystyrene boxes and discarded nets from the fishing industry are found alongside packaging materials, disposable lighters, plastic bags, plastic bottles and ring pulls, as well as empty bottles of sun screen. Clearly, both the shipping industry and the public as the users of beaches, boats etc. are active contributors to this problem. Plastic waste accounts for the lion's share of litter worldwide at around 60 %. My own experiences confirm this estimate.

In recent years, marine litter has evolved into one of the most pressing threats to marine ecosystems worldwide and poses a major problem for international marine conservation. What was once a purely aesthetic problem is now a very real ecological challenge. Whereas ten years ago, reports on this topic appeared sporadically in the media, these days, worrying accounts of litter findings, dead birds and mammals, and vast carpets of waste in the Pacific, the Sargasso Sea and the North Atlantic appear almost weekly on the radio and television and in newspapers and magazines. The belief that our oceans have an infinite capacity to absorb waste has given way to

the realisation that we have overstepped the boundaries, and that active solutions must be sought.

As Director-General of water and waste management at the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, I have come full circle from my private experiences to my professional role. Waste management and conservation of the marine environment go hand in and, and it is therefore only fitting that they are combined into one department. Both areas offer starting points for devising specific solutions.

Solving the problems on our own doorstep is undoubtedly a priority, but the basis for counteractive measures often transcends national borders and competencies. Cooperating with our immediate neighbours, i.e. the other littoral states of the North and Baltic Seas, is the first, success-critical step in cross-border action. In my opinion, the Regional Action Plans for the four European seas highlighted by this conference have been very successful in paving the way for structured measures tailored to the specific requirements and challenges of a particular marine region.
We make no secret of the fact that the problem of marine litter in the Baltic Sea, while significant, is not on the same scale as that faced by the German North Sea coast, for example. This is largely due to the fact that the Baltic Sea, being virtually enclosed, only has to cope with emissions directly into the Baltic Sea itself or from surface runoff.
By contrast, the North Sea coast is the final resting place for waste also from distant regions of the globe. It therefore makes good sense, both strategically and economically, for littoral states worldwide to work together to tackle a problem that concerns us all. I would like to stress how important I feel it is to implement the Honolulu Strategy. While detractors might argue that global solutions can only ever occur at a comparatively low level, I believe that a global sense of responsibility is vital if we are to get this problem under control. If the Rio+20 resolution to significantly reduce marine litter at global level by 2025 is to be taken seriously, some form of global arrangement is needed.

In our endeavours to reduce waste emissions, it is worth taking a look at the wide range of regulations and activities that already exist, rather than reinventing the wheel.

Let's begin *on* the ocean: For years, the North and Baltic Seas (our "home" seas), together with the Mediterranean, have been designated special areas for waste under Annex V of the MARPOL Convention by the International Maritime Organization IMO in London, responsible for regulating international marine shipping. Since 1988 (Baltic Sea and Mediterranean) and 1991 (North Sea) respectively, these areas have enjoyed higher levels of protection than other marine regions; the *discharge of garbage from ships into the sea* is prohibited.

In an ideal world, therefore, if these regulations were properly observed, we would not have such an intensive accumulation of waste on our beaches, particularly in the Baltic Sea, which is virtually enclosed. In reality, however, the opposite is true.

The latest MARPOL violation statistics from the Federal Maritime and Hydrographic Agency (BSH) for the North and Baltic Seas indicate that in 2011, 904 violations were established during a total of 3,813 inspections, and 103 fines were imposed. Apart from prohibited oil discharges, the bulk of these incidents were violations of Annex V relating to waste discharges into the marine environment. Here too, the number of offences has increased against the previous year.

At *European* level, another relevant legislation is the Directive on port reception facilities for ship-generated waste and cargo residues. This Directive could likewise make a more effective contribution to the avoidance of waste emissions, were it not for a series of problems that inhibit its effective implementation. The Directive is current undergoing a revision process which should urgently be used to ensure the uniform, uncomplicated reception of ships' waste in ports. Differing and high disposal fees or complicated logistics prevent such facilities from being more widely used. Back in 1998, this realisation prompted unilateral action in the Baltic Sea region, when a system without special fees for Baltic Sea ports was introduced by the Baltic Strategy on Port Reception Facilities for Ship Generated Waste. Under this system,

disposal fees are already included in the basic port charges, so that disposal is not perceived as an additional cost factor. This has led to a tangible reduction in waste emissions from Baltic Sea ports.

The European Marine Strategy Framework Directive is currently at the heart of all marine conservation efforts in Europe. The objective of a good environmental status in all European seas by 2020 explicitly includes the aspect of marine litter. In Germany, the Federal Government and the Länder have added operational targets to the superordinate objective prescribed by the Directive. Aside from Germany's many years of involvement in regional and European cooperation at a technical level, the tight deadlines imposed by the Directive have prompted a significant acceleration in the issue of marine litter. Successfully harmonising the very ambitious 2020 target despite our inadequate knowledge of marine litter will be a huge challenge, but I believe that an essential in-depth analysis of the topic will produce tangible results within an acceptable period.

MARPOL and the EU Directives elucidate two things: active measures are already in place to restrict or completely prevent the discharge of waste into our seas; but regulation in itself does not necessarily solve the problem. It is often a matter of persuasion as well. The shipping and fishing sectors, individual tourists on the beach, as well as industry and commerce, all must be convinced that an item's ultimate fate is an important consideration at every stage in the lifecycle of plastic products and packaging materials. This concerns both direct contamination of our coastlines and seas, as well as indirect waste discharges via rivers. Here in Germany, experience has shown that a sophisticated waste management system can be very effective. Manufacturers and distributors have explicit obligations in this regard. Responsibility for the product, and in particular for the packaging materials as well, rests with them throughout the entire lifecycle, including the disposal phase.

However, despite all the regulations and persuasion, and notwithstanding our efforts to ensure consistent enforcement, all too often, the ocean is the final stage in the lifecycle of a piece of plastic packaging or a disposable lighter.
So how should we deal with litter from all corners of the globe that has found its way into the marine environment and is already impacting the marine ecosystems on the water surface, in the water column and on the seabed?
Initiatives such as the Fishing for Litter campaign by Friends of the Earth Germany and the Nature and Biodiversity Conservation Union (NABU), whereby fishermen can bring the waste caught in their nets to shore without being charged for disposal, are extremely welcome.
However, inland regions, or, in a transboundary context, upstream countries, must also share responsibility for marine litter and the prevention thereof. The well-known clean-up days are about more than just cleaning up the local landscape; in the medium term, they also prevent waste discarded in the countryside from entering the sea via various waterbodies. Litter collection campaigns on the beaches of the North and Baltic Seas prevent marine litter washed ashore from re-entering the water and dispersing on the open seas.

There is also a growing number of initiatives by industry that are worth mentioning. One recent example was the successful workshop by the plastics industry on Land Sourced Litter, which took place a few weeks ago here in Berlin. I welcome the fact that the plastics industry has demonstrated its willingness to accept responsibility for its products, even beyond the existing statutory regulations, and remain hopeful that further concrete contributions will follow.

Kindly understand that I am not trying to highlight one or two specific initiatives; these are just examples of individual commitments and targeted measures for dealing with the problem of marine litter.
Of course, the plastics industry undoubtedly faces a growing image problem, with the general public, the media, and some politicians blaming it for the trash carpets on the water's surface, in the water column and on the seabed.

However, plastics manufacturers are not the only ones responsible. I would call upon the shipping and fishing industries to step up to the plate as well. The large volumes of accumulated packaging waste such as shrink-wrapping indicate that the shipping sector also plays a part in the story. Furthermore, the ghost nets drifting across the world's oceans have recently become a high-profile example of the fishing industry's significant share of responsibility for plastic litter in the marine environment. Pieces of net both large and small are a clear indication that the fishing industry needs to take greater care of its nets, possibly by equipping them with miniature transmitters or conducting thorough searches.

Accepting responsibility is the key here. Of course, it is impossible to precisely quantify and allocate every source and every emission pathway, and we do not have sufficient data to track every phase in the lifecycle of a plastic bottle from shop counter to ocean. However, it must be quite clear to everyone that concerted action is urgently needed.
At this point, I would particularly like to highlight one of the basic pillars of our environmental policy which I fear is being sidelined: the *precautionary principle*. Consistent enforcement of the precautionary principle is the only way to promptly and effectively stem the tide of marine litter without legislation and EU directives.
Just to be perfectly clear: I am not saying that short-term action alone is the answer. However, it is essential and its effectiveness is proven.
Sooner or later, we need *scientific* evidence of causal correlations.

Finally, allow me to highlight one aspect which might be overshadowed by the horrendous images that have been published of strangled seabirds and huge quantities of plastic waste found in the stomachs of marine mammals.
I assume that each of us here today has the best intentions of resolving the problem of marine litter as quickly as possible. However, we must all realise that despite substantial evidence of the adverse consequences of marine litter for marine organisms, and even clear indications of the potential impacts on humans at the end of the food chain, there is still a lack of knowledge regarding certain aspects, particularly the

removal of litter from the ocean. Our understanding of the movement, decomposition and density of waste floating in our seas remains very limited. We need to find out much more about where marine litter accumulates, the location of the permanent eddies and vortexes which draw the waste carpets together, and how deep-sea zones respond to litter discharges. More research is also needed into the time frames for the dispersion and accumulation of marine litter. We still lack a *comprehensive* understanding of the physical, chemical and ecological consequences of microparticles for both marine organisms and humans. One topic which particularly interests me is the use of marine litter by marine organisms, which attach themselves to the waste and travel as 'passengers' into regions they would not normally frequent. This is another aspect of the phenomenon of alien species, where efforts in the past have tended to focus on the treatment of ballast water.

So what are my conclusions? I did not come here today to focus on just one aspect of marine litter. Satisfactory results cannot be achieved by considering the legal, media, economic or ecological perspectives in isolation. I firmly believe that we need an integrated policy approach that can effectively link together users, conservationists and *research*. Vertical and horizontal integration is the key to successfully tackling this problem which affects us all. I am confident that each of us will see carelessly discarded coffee cups and plastic bags dropped near streams through different eyes in future; similarly, when out shopping, we will think twice about whether we really need yet another plastic bag to carry our purchases home. At the moment, we are in a situation where we have more questions than answers. Rather than resigning ourselves to this fact, it should inspire us to tackle the threat posed by litter in the world's oceans with the necessary rigour.

Thank you for your attention.