



**RESPONSIBLE FISHERIES  
BASED ON INFORMATION TECHNOLOGY AND SCIENCE**

**Speech  
by  
the President of Iceland  
Ólafur Ragnar Grímsson  
at  
a Forum in Bremerhaven  
during a State Visit to Germany  
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Ladies and gentlemen

In the early years of my Presidency I was privileged to host the great explorer Thor Heyerdahl, of *Kon-Tiki* fame, who, with his vision, had been a hero to young boys growing up in the fishing villages of the Icelandic Western Fjords. In old age he had become frustrated by the lack of research into the extraordinary universe beneath the surface of the oceans, and was angry about the reckless exploitation of marine resources.

“We know less about the oceans than we know about the Moon,” was his startling statement. At first I thought this was an exaggeration by a disappointed man but soon had the truth of what he said confirmed by others.

Fifteen years have now passed, and science has certainly progressed, but it probably still remains true that the race started by President Kennedy and Khrushchev six decades ago raised greater resources for space exploration than have been available for the combined effort to understand the nature of the world’s oceans.

Thus, the premise of our dialogue must be the humble acknowledgement that we are still in the early stages of understanding the forces which dominate the seas and determine their future, the laws which govern the harmony between the different species and the balance which must prevail among the various bio-systems based in the multi-layered

salty waters. We certainly lack sufficient awareness of how the aggressive arrival of *homo economicus* is challenging the sustainability of the oceans.

The international dialogue on the oceans, negotiations and discussion must take account of this awareness that our journey is still in its early stages. Our common knowledge is so limited that the oceans must always be given the benefit of the doubt and economic utilisation must rest on sound scientific recommendations – otherwise we will risk destroying what to future generations should be the essence of their inheritance.

The history of my small nation, which for centuries has sustained itself on the resources of the ocean, is in many ways a vivid illustration of the message I wish to convey. When the Republic was established in 1944, our economic pillars were still weak. Foreign fishing fleets, from Britain, Germany, France and other European countries made their catches freely right up to our shores. Thus, the need for the expansion of our Exclusive Economic Zone (EEZ) became an extension of our independence campaign, first to 12 miles, then to 50 and finally to 200 nautical miles.

It is a testament to progress that since the 1980s, the United Nations Law of the Sea has governed actions by sovereign states; a proof that visionary efforts and strenuous negotiations can indeed succeed. It is now the firm foundation of relations in the North Atlantic and the Arctic. It provides the framework for the protection and utilisation of marine resources, supported by Atlantic fisheries organisations and, in a general way, the Arctic Council, which since its foundation in the 1990s has become one of the most successful examples of how productive regional cooperation can replace deep-rooted hostilities.

Climate change is already bringing new challenges to the North Atlantic as the recent dispute over the migrating mackerel stock clearly demonstrates, and in the coming years we can expect that the melting of the ice in the Northern Regions will open up new fishing grounds as southern species may migrate northwards into more palatable ecosystems.

Since our struggle to extend our economic zone from 4 to 200 nautical miles was a direct continuation of our successful campaign for the establishment of the Republic, the Icelandic nation has been deeply aware of its responsibility to preserve the resources of the ocean.

Thus, for decades the Marine Research Institute has by law had a key role in determining the annual catch of various species and the authority to close areas when the protection of spawning fish so requires.

At first, some politicians and local community leaders, and of course many fishermen, were not ready to accept its recommendations, believing that their own instinct was a better guide, but gradually our annual fisheries catches have become firmly based on scientific recommendations.

To strengthen this system we developed in the 1980s a comprehensive regime of catch quotas for every vessel, making them transferable from the 1990s. Although this system is still hotly debated in my country, and it certainly has weaknesses, especially regarding how commercially-based transfers by individual companies can affect the fortunes of small fishing communities, the result has been that Iceland is probably the European country that has succeeded best in recent decades in maintaining its fish stocks at sustainable levels while making its fishing companies economically stronger and more profitable.

The scientifically-based quota system is also one of the reasons why Iceland has come out of the 2008 financial crisis earlier and more effectively than anyone expected, demonstrating a clear correlation between such a sustainable fishing regime and recovery from a severe banking collapse.

Due to its significance for our economy, the fishing sector has furthermore served as the basis for technological innovations by a multitude of engineering and IT companies, opening for them routes to global success. Thus, for example Marel which grew out of a cooperative venture between the University of Iceland and a few fishing companies, has become a major world player in the production of food processing machinery. Its products are now used by major fish and meat producers in the US, Latin America, Europe, Russia and Asia. In the same way, 3X-Technology in my small home town of Isafjordur with about 2,600 inhabitants, now produces processing machines for both Thailand, Canada, China and other countries.

We could give many other examples of how an enlightened and responsible fishing sector can foster successful IT and other high-tech companies, but let me conclude by briefly describing two innovations which I believe could, if made into an international praxis, lead to a major steps towards responsible global fisheries.

First, the small automatic tracking devices, some costing only about 150-375 euros, which for years have been obligatory instruments on every Icelandic vessel, large and small. They send signals to satellites or other receivers, enabling the authorities to monitor where each vessel is at all times. This creates a continuous record of vessel movements, supports

rescue efforts and enables companies to assemble data on the basis of which they can organise their fleet in a more profitable way.

Currently all nations are linked to a strict international regime which obliges every aeroplane that takes off, whether large or small, to meet specific technical requirements. We should similarly negotiate international agreements aimed at bringing tracking instruments into every vessel in the world and thus transform the foundations on which a global system of responsible and safe fisheries can be firmly established.

The second innovation is to utilise the QR or barcoding we all know from our everyday shopping, by putting it on every piece of fish product sold anywhere in the world. Icelandic companies have a well-established practice of using such bar-codes in both the European and US markets, indicating the vessel that caught the fish, the processing factory and even the individuals who handled the fish on its way from the ocean to the consumer.

In addition, Icelandic companies have put priority on conservation and sustainable use of marine resources by using the FAO Code of Conduct and FAO Guidelines for Eco-labelling of Fish and Fishery Products as the basis for certifying responsible fisheries management in Icelandic waters.

We now have the technological ability to allow buyers of fish anywhere in the world to check on their smartphones the names of every crew member of the boat that caught the fish, where exactly it was located, how the fish came out of the ocean and photos of the proud workers in the processing plant.

By making these and other IT innovations obligatory world-wide through international agreements and by utilising tools like Google Earth, important contributions could be made towards responsible management of the ocean resources.

There is no reason why other countries cannot adopt the computerized system which the Icelandic Directorate of Fisheries has developed in cooperation with our innovative IT companies like TrackWell. It allows the Directorate to have up-to-date information on the catch of each vessel, classified by species, port of landing, the fishing gear used, the fishing grounds and the buyers of the catch. This information is then immediately put on the Directorate's website and updated every six hours, so competing fishing companies can simultaneously check on each other and everybody else anywhere in the world can access their performance in a transparent way.

The nexus between IT and responsible fisheries is probably our best hope of reform, but let us also remember that the success of the UN Law of the Sea remains a profound proof of how the nations of the world can indeed unite in common action.