



**Address**  
**by**  
**the President of Iceland**  
**Ólafur Ragnar Grímsson**  
**at the opening of the Congress of**  
**International Association of**  
**Volcanology and Chemistry**  
**of the Earth's Interior**  
**Reykjavík**  
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Distinguished scientists  
Ladies and gentlemen

It is a great pleasure for me to welcome you to Iceland, the country that is in many ways the most fascinating, dynamic and active volcanic laboratory anywhere in the world, a country where over the centuries the people have become accustomed to such displays, and regard them at the same time as ordinary occurrences and as magnificent entertainment, while not forgetting the terrible destruction they can cause.

Icelanders have always been keenly aware that the opening of the Old Testament, the Book of Genesis, describing how the Almighty created the earth in six days and then decided to rest, is not entirely accurate. When it came to Iceland, God became so fascinated by the endless possibilities that the creation has continued in our country until this very day, and will certainly do so for centuries to come, with new volcanoes, new islands, new lava fields, earthquakes, eruptions and other dramatic manifestations of the creative powers.

This awareness, and the privilege of being at close quarters a constant witness to the creation, has profoundly affected the culture of our nation, our spirituality, our sense of being, our poetry as well as our music and also our respect for the forces of nature, our humility towards Mother Earth, our conviction that, despite all scientific, technical and economic progress, we are not destined to be the Masters of the Universe.

Such a vision is especially important at the dawn of the 21<sup>st</sup> century when mankind faces the greatest environmental challenge of all times, when all of us must gather together to prevent the colossal disaster of irreversible climate change – with destruction on a greater scale than the both World Wars and the Great Depression combined.

When nations deliberate how to marshal our forces, Iceland is well placed to offer enlightening insights. Not only is our country an on-going laboratory of volcanic experiment; it is also the home of the largest glaciers in Europe, where the effects of climate change can be seen directly as the ice retreats.

We have also for centuries battled the largest desert in Europe, partly caused by volcanic ashes but also enlarged due to irresponsible land use; a desert which our scientists and researchers have now made into a testing ground for progress in soil sciences, producing results of great importance for people in Asia, Africa and other desert-prone parts of the world.

Iceland is furthermore the location where the Gulf Stream meets the melting ice-water from Greenland and the Arctic, a process which produces the motor which drives the entire global conveyor belt of ocean currents.

But Iceland is also the country which displays how the fire inside the earth can be harnessed to create clean energy in abundance for industrial and civil use, how we can replace coal and oil with a sustainable energy system and thus reduce the risk of irreversible climate change.

The curse which comes with earthquakes also brings the blessing of clean energy possibilities and Iceland offers the rest of the world a road map of how these can be realised, how the vision of 100% clean electricity production can in fact be achieved. It is not a fanciful dream but an everyday reality in our country.

Iceland therefore can, and indeed must, play a significant part in the scientific research and the global dialogue necessary to deal with the dramatic threat of climate change, and show leadership in the dialogue on how we can indeed transform our societies in environmentally responsible ways.

Both scientifically and politically speaking, Iceland can therefore be a "hot spot" as it is in the geological sense. Just as the country features as the most volcanically active part of the Mid-Atlantic ridge, situated at the junction of two large physiographic structures and giving expression to the geological processes that have modified the surface of our planet, so

Iceland must also make an active contribution to, and serve as a forum for, international scientific cooperation and debate on policy.

Historically, my small nation might in earlier times have contributed more to the world's geological scientific progress, but poverty, isolation and the little-known Icelandic language prevented the necessary spread of knowledge acquired in our country.

Two centuries ago, the Reverend Jón Steingrímsson provided a detailed description of the Laki Fires of 1783-1785, and the reflections of the medical doctor Sveinn Pálsson on the movements of the glaciers, dating from around 1800, would have been ground-breaking had they become widely known at the time.

The results of the Icelandic interdisciplinary studies of the great Hekla eruption in the 1940s only received limited distribution, even though they were published in English, but now the descriptions by Professor Sigurður Thórarinsson of the eruption and his contribution to the development of the science of tephrochronology belong to the international classics of volcanology.

The first attempt by a meteorologist, Hlynur Sigtryggsson, to model the behaviour of volcanic plumes mathematically, unfortunately went unnoticed and the model had to be reinvented 20 years later. The same may be said about Professor Thorbjörn Sigurgeirsson's theoretical exposition of Argon-Argon dating of rocks which he published in 1962 in a 9-page mimeographed report in Icelandic; a method which was later employed to date Lunar rocks.

In the mid-1950s, Professor Trausti Einarsson published a map showing "paleomagnetic striations" in the region between the rift zone at Langjökull and the coast at Hvalfjörður – in hindsight the stage was set for "crustal spreading", but that discovery remained for others to make less than a decade later.

At the opening of this great international conference, I pay homage to these Icelandic pioneers and reflect on how I personally can bear witness to how recently this chapter in science has been written.

My late wife Guðrún Katrín cooperated as a young assistant closely with Sigurður Thórarinsson, and together with my friends I as a teenager sang the popular songs which Sigurður created during his volcanic expeditions, songs which immediately became national hits, in fact making the Professor into what would be a pop idol in modern terms. My classmates from high school worked as undergraduates with Thorbjörn

Sigurgeirsson during their summer breaks, and Trausti Einarsson's works were followed with interest by us all.

During my Presidency, I have been privileged to cooperate with Icelandic glaciologists, geologists and other researchers and experts in strengthening our cooperation with the international scientific community, creating, for example, an earthquake early-warning system in India and building a scientific network to examine the retreat of the Himalayan Glaciers which potentially could become the greatest ecological disaster of the 21<sup>st</sup> century.

Glaciers all over the world are rapidly shrinking and therefore the land is rising as it did at the end of the Ice Age. The consequences of the melting of the two-kilometre thick ice sheet was that the level of volcanic activity in Iceland was, for some thousands of years, at least 30 times what it is today, with great quantities of CO<sub>2</sub> released to the atmosphere.

In the present global crisis we must either produce less CO<sub>2</sub> or remove it from the atmosphere, and preferably both. A scientific project of the latter type is now in progress here in Iceland, where scientists from the United States, France and my country have joined hands with the Reykjavík Energy Company to pump CO<sub>2</sub> down through the geothermal boreholes into the basaltic rock where hopefully it will stay in a solid form forever.

If this is successful, it could become a revolutionary contribution to the solution of the climate change challenge; a magnificent example of how scientists from many disciplines and different countries can come together in a crucial global endeavour.

You meet here today at a crucial juncture in the human journey, and I hope that Iceland, so rich in volcanic and climatic dimensions, will be an inspiring location for your deliberations, your dialogue and your decisions, helping to introduce new ideas, open new perspectives and lead to important projects.

In the spirit of this vision, I welcome you all; may the ever-changing light which Iceland has in such abundance continue to inspire your discoveries long after this conference has come to a successful conclusion.