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Oceanográfica
Intergubernamental

Межправительственная
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Statement by the Intergovernmental Oceanographic Commission of UNESCO

regarding Ocean Fertilization

UNESCO, 19 October 2012

A largescale geoengineering¹ experiment carried out in July 2012 was communicated to the general public this week.

A private company dumped one hundred tons of iron to deliberately fertilize the Pacific Ocean 300km off the west coast of Canada and trigger a plankton bloom. The stated intention was to enhance fisheries in the area. In scientific terms, this deliberate intervention is also known as ocean fertilization or climate engineering.

The potential side effects of geoengineering, in this case of ocean fertilization², are presently not well understood and will likely include unintended ecological consequences, which in turn can pose important political, social, and ethical challenges. Meeting the political and ethical challenges of geoengineering requires building toward an international governance framework to ensure that research into global climate modification is conducted responsibly and transparently. Geoengineering, including ocean fertilization, also presents serious regulatory challenges.

The United Nations General Assembly has encouraged States to support further study and to enhance understanding of ocean fertilization (Resolution 62/215; December 2007). Four UN entities have major interests in this topic: the Intergovernmental Oceanographic Commission of UNESCO (IOC)³, the Convention on Biological Diversity (CBD)⁴, the London Convention and Protocol (LC/LP)⁵ and the UN Convention on the Law of the Sea (UNCLOS)⁶. Together they cover the spectrum of marine science, marine conservation and pollution regulation.

Upholding the precautionary principle, the Parties to the Convention on Biological Diversity (CBD) decided in 2008 that no further ocean fertilization activities for whatever purpose should be carried out in non-coastal waters until there was stronger scientific justification, assessed through a global regulatory mechanism.

¹ *Geoengineering refers to "the deliberate large-scale intervention in the Earth's climate system, in order to moderate global warming".

² Ocean fertilization - or ocean nourishment - is a type of [geoengineering](#) based on the purposeful introduction of [nutrients](#) to the upper [ocean](#)¹ to increase marine food production and to remove [carbon dioxide](#) from the atmosphere

³ For information about the IOC see: <http://www.unesco.org/new/en/natural-sciences/ioc-oceans/>

⁴ For information about the CBD see: <http://www.cbd.int/>

⁵ For information about the LC and LP see: www.londonprotocol.imo.org

⁶ For information about the UNCLOS see:
https://www.un.org/depts/los/convention_agreements/texts/unclos/

Such a regulatory framework is now being developed by the London Convention and London Protocol.

The Intergovernmental Oceanographic Commission of UNESCO (IOC) has been closely involved in CBD and LC/LP discussions. IOC Member States have agreed that the precautionary principle is fundamental to the regulation of ocean fertilization. Its 2009 publication, "Ocean Fertilization: A Scientific Summary for Policy Makers", which was commissioned in conjunction with Surface Ocean - Lower Atmosphere Study (SOLAS), the International Commission on Atmospheric Chemistry and Global Pollution (ICACGP), The World Climate Research Programme (WCRP), The International Geosphere-Biosphere Programme (IGBP) and the Scientific Committee on Oceanic Research (SCOR), includes in its key messages that '*large-scale fertilization could have unintended (and difficult to predict) impacts, not only locally, e.g. risk of toxic algal blooms, but also far removed in space and time. Impact assessments need to include the possibility of such 'far-field' effects on biological productivity, sub-surface oxygen levels, biogas production and ocean acidification*'.

In response to concerns that large-scale ocean fertilization might be attempted before its consequences were fully understood, CBD, Parties to the LC and LP and IOC have urged governments to ensure that ocean fertilization activities do not take place until there is an adequate scientific basis on which to justify such activities, including an assessment of associated risks. These UN entities have also advocated for a global, transparent and effective control and regulatory mechanism to be put in place for these activities, with the exception of small scale scientific research studies within coastal waters.

IOC wishes to reiterate that given the present state of knowledge, ocean fertilization activities other than legitimate scientific research, should not be allowed unless they are conducted in agreement with the resolution adopted under the London Convention and Protocol. Large scale experiments should be conducted responsibly and transparently, and the potential benefits and risks equitably distributed.

IOC is concerned about activities which are carried out in the absence of transparency and in violation of international conventions. The ocean is a single, contiguous body of water that is crucial to human life: an unauthorized experiment carried out in one place can have consequences hundreds of kilometres away. Our well-being depends on a healthy ocean. We must take responsibility for this global commons, and build on shared knowledge and international cooperation to manage it sustainably.

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