The ABCs of

Ensuring Precaution on Geoengineering

Agenda item: 11.2 Relevant documents: UNEP/CBD/COP/11/3, UNEP/CBD/SBSTTA/REC/XVI/9, UNEP/CBD/SBSTTA/16/INF/28, UNEP/CBD/SBSTTA/16/INF/29, UNEP/CBD/SBSTTA/16/INF/30

Geoengineering refers to technologies designed to intervene in and alter earth systems on a large scale – particularly proposals to manipulate the climate system as a 'technofix' for climate change. Geoengineering can refer to a wide range of schemes, including: blasting sulphate particles into the stratosphere to reflect the sun's rays; dumping iron particles in the oceans to nurture CO_2-absorbing plankton and genetically engineering crops so their leaves might reflect more sunlight.

Such schemes are highly speculative, inequitable and potentially devastating for people and ecosystems. However, the past few years have seen a marked increase in proposals from scientists and scientific institutions, commercial players and even some governments to pursue geoengineering approaches. Several proposals for open-air experimentation have now been tabled. Some are in preparation and, in a few cases, have already been carried out.

In October 2010 in Nagoya, Parties to the CBD adopted a landmark decision to place a moratorium on the testing and deployment of geoengineering technologies (Decision X/33 para 8w) – recognising the particular threat to biodiversity and livelihoods. That moratorium marked the first time an international body had begun to establish oversight over this new field. COP10 Decision X/33 also included a call for three studies: on biodiversity impacts; on governance; and on views and experiences of indigenous and other communities (summarised in UNEP/CBD/SBSTTA/16/10).

These studies were to inform appropriate precautionary oversight of geoengineering as it relates to biodiversity.

Those three studies have been completed and reviewed by SBSTTA and Parties will be asked to decide next steps under item 11.2 of the COP11 agenda.

Next Steps – The ABC of Precaution on Geoengineering

ETC Group proposes that parties meeting in Hyderabad adopt an "ABC" of precaution:

A: AFFIRM the moratorium.

B: BAN open-air tests.

C: CREATE monitoring capacity.

Additionally, Parties should:

D: DEFEND the role of the CBD in decision-making on geoengineering and biodiversity.

E: ENSURE proper participation of indigenous and local communities in decisionmaking on geoengineering.

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Geoengineering developments since Nagoya: testing the moratorium?

Decision X/33 sent a clear signal that technological climate manipulation is an inappropriate response to the climate crisis. Unfortunately, the Decision has not halted attempts to proceed with geoengineering schemes. Events since Nagoya reflect two seemingly contradictory trends: on the one hand, an increasing number of warnings and official statements echoing the precautionary sentiment of both Decision X/33 and the previous CBD decision on ocean fertilization (Decision IX/16c); on the other hand, an increasing number of attempts by some institutions and governments to carry out open-air geoengineering experiments in contravention of the spirit of Decision X/33.

Embracing precaution:

In October 2011 the European Parliament adopted a resolution in preparation for the Rio+20 Summit that expressed "opposition to proposals for large scale geoengineering" – the first time the European legislature had commented on the matter. At Rio itself in June 2012, governments adopted language (in the negotiated text of the 'outcome document') expressing support for the existing moratorium on ocean fertilization agreed under the CBD: "We stress our concern about the potential environmental impacts of ocean fertilization. In this regard, we recall the decisions related to ocean fertilization adopted by the relevant intergovernmental bodies, and resolve to continue addressing with utmost caution ocean fertilization, consistent with the precautionary approach."

In December 2011, the German Federal Environment Agency (Umweltbundesamt), released a geoengineering policy study recommending "that greater restraint be exercised and a moratorium imposed on the employment of such measures until there is a substantial improvement in knowledge of the interdependencies of geo-processes."

Meanwhile, the high-profile Geoengineering Model Intercomparison Project (GeoMIP, a project of the World Climate Research Programme) published first results in June 2012: There is high agreement among different climate models that geoengineering schemes that reduce solar radiation would reduce rainfall globally particularly over the tropics.

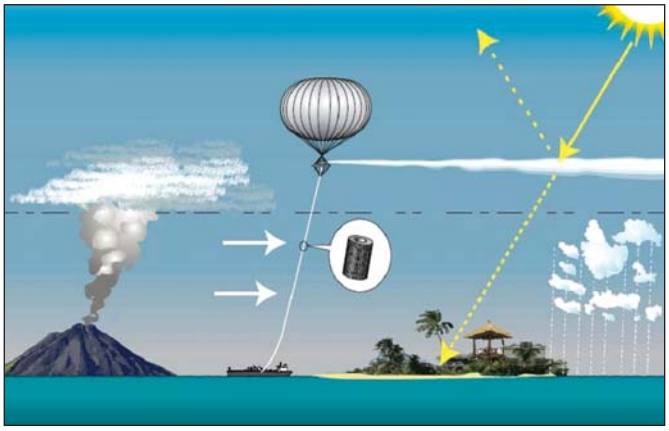


Diagram of the SPICE experiment

Throwing precaution to the wind:

- In 2011, a group of UK researchers known as the SPICE consortium (Stratospheric Particle Injection for Climate Engineering) announced they were about to release water vapour into the upper atmosphere through a 1km suspended hose to test out the delivery mechanism for later release of sulphur particles. The test was first delayed and then cancelled in April 2012 after a public outcry. However, a modified version of the SPICE experiment in which titanium dioxide nanoparticles will be released is still being pursued by a group of UK engineers led by a technical advisor to the SPICE project.
- In June 2012, two researchers at Harvard University began talking to the press about an experiment they are planning to test a mechanism for delivering reflective particles (SRM). Most likely, the experiment will take place over New Mexico and involve a balloon 24,000 meters in the air. They are seeking funding from the US government.
- The Desert Research Institute in Utah (USA) has proposed carrying out tests to seed high cirrus clouds with particles to whiten them (using the exhaust system of airplanes to disperse the particles). Similar seeding tests were carried out in 2011 off the coast of Monterey, California as part of the E-PEACE experiment (Eastern Pacific Emitted Aerosol Cloud Experiment).

Moving On – Agreeing an ABC of Precaution

Given the contradictory response to Decision X/33, ETC Group urges Delegates to use the opportunity of COP11 to re-state and reemphasize the importance of precaution, and we recommend an 'ABC' of precautionary oversight of geoengineering:

A – AFFIRM THE MORATORIUM

When the de facto moratorium (Decision X/33 paragraphs 8w and x) was agreed in Nagoya, some geoengineering advocates attempted to downplay or sideline the decision claiming that it was not well grounded or that it has been superseded by other agreements elsewhere. The advice from SBSTTA makes clear this is not the case.

Further, the three studies commissioned by the Secretariat clearly demonstrate that the basis on which the moratorium was agreed in Nagoya was correct and that the moratorium should remain in place.

The study on biodiversity impacts (UNEP/CBD/SBSTTA/16/INF/28) and its summary (UNEP/CBD/SBSTTA/16/10) demonstrates that there is not an adequate scientific basis on which to justify geoengineering activities. Specifically the study points out that no geoengineering approach meets basic criteria for effectiveness, safety and affordability (section 2); that attempts to alter levels of incoming solar radiation ("Solar Radiation Management," Sunlight Reflection Methods or SRM) would precipitate significant and almost impossible-to-predict ramifications (section 4) and that carbon dioxide removal techniques are highly speculative, of doubtful effectiveness and in many cases will have unintended impacts on terrestrial or marine ecosystems (section 5).

Meanwhile, the legal and regulatory study undertaken by the Secretariat (UNEP/CBD/SBSTTA/INF/29 also summarised in UNEP/CBD/SBSTTA/16/10) concludes "the current regulatory mechanisms that could apply to climate-related geoengineering relevant to the Convention on Biological Diversity do not constitute a framework for geoengineering as a whole that meets the criteria of being science-based, global, transparent and effective," raising particular concerns about the transboundary effects of geoengineering activities (section 6). "The lack of regulatory mechanism for sunlight-reflection methods...especially given the potential for significant deleterious transboundary effects" is of particular concern.

Parties at COP11 must use this opportunity to affirm that the moratorium on open-air testing and deployment stands, that it is well grounded and that it has not been superseded.

B – BAN OPEN-AIR TESTS

Decision X/33 specified that no geoengineering activities that may affect biodiversity should take place and that even small scale scientific research studies should be conducted only in a controlled setting and only when justified by the need to gather specific scientific data and when subject to a thorough prior environmental impact assessment.

The studies commissioned by the CBD Secretariat raise especially strong concerns about geoengineering techniques that are transboundary in nature and those that occur in global commons such as the ocean and atmosphere. Parties may also extend those concerns to other commons such as Polar regions and outer space. Additionally the studies find that there are particularly serious scientific and governance concerns associated with Sunlight Reflection Methods (SRM) such as stratospheric aerosols and maritime cloud albedo techniques. The studies warn that the SRM approach introduces a novel dynamic between warming due to high CO2 and cooling due to sunlight reduction, which has no historical precedent and whose ecological impacts cannot be foreseen. SRM, in particular, is incompatible with a precautionary approach.

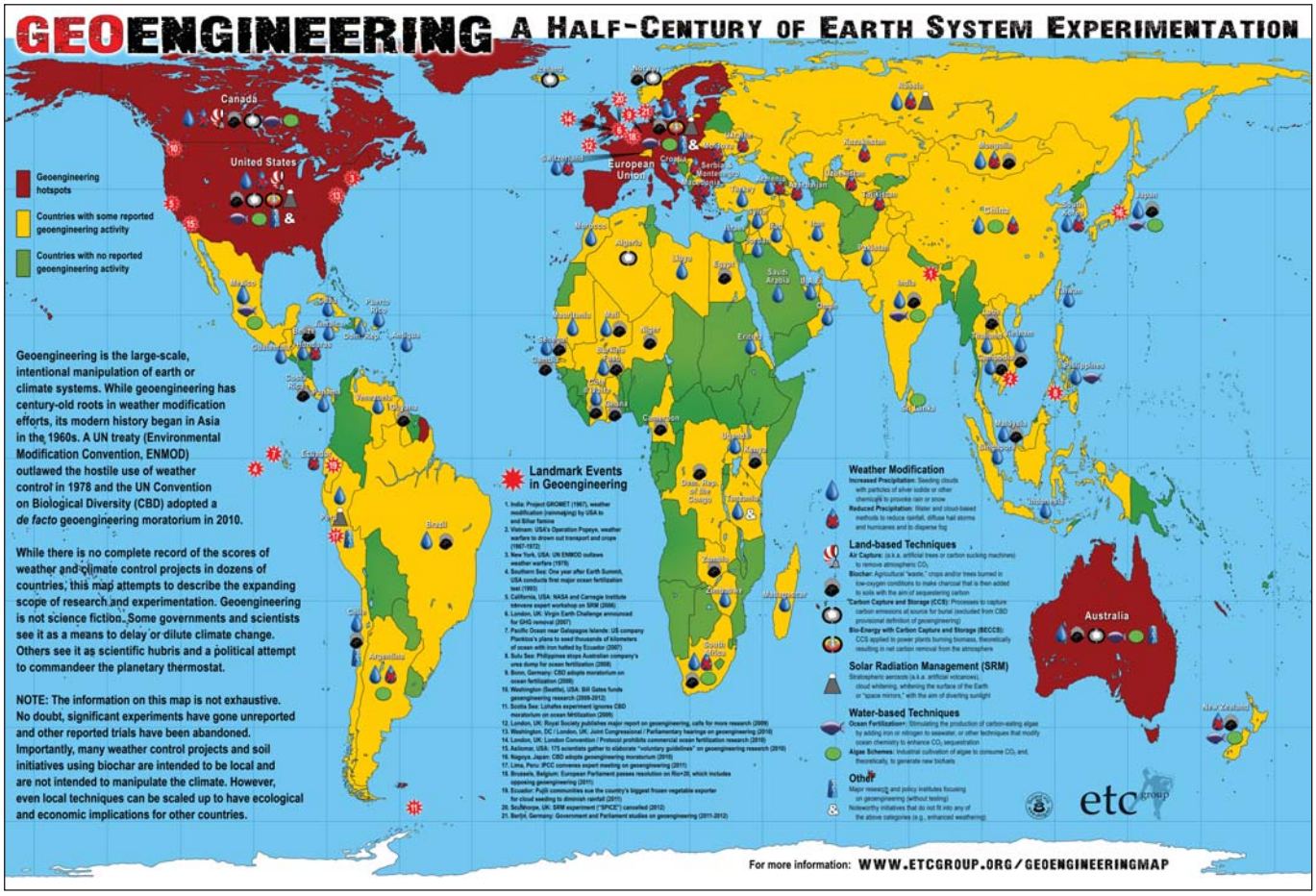
In order to clarify the intent of the CBD moratorium, ETC Group proposes that stronger measures be adopted which explicitly forbid attempts to carry out some experiments outside of a laboratory setting.
Such real-world experiments are in no way "in a controlled setting" and in the case of hardware tests are not "justified by the need to gather specific scientific data" for knowledge purposes but are rather engineering attempts to develop working hardware for future deployment.

We propose that in addition to the moratorium and in line with Article 3 of the Convention that establishes the principle that no transboundary harm will be caused by any activity done within a national boundary, Parties to COP11 could support a ban on experimental geoengineering tests outside of a laboratory setting that meet any of the three following criteria:

a) They impact biodiversity.

b) They either take place in the global commons (atmosphere, oceans, Arctic, Antarctic or outer space) or have impacts on these commons.

c) They are intended to develop hardware for or to test Solar Radiation Management technologies.



C – CREATE MONITORING CAPACITY

In the last few years, interest in geoengineering from private sources and some governments has increased and the number of institutions and individual researchers engaged and funded to consider geoengineering approaches has also grown. As money and attention flows into the field, maintaining the terms of the moratorium and a subsequent test ban necessitates a capacity for ongoing monitoring of geoengineering activities to ensure they remain in a controlled setting.

In early 2012, ETC Group published a comprehensive map (shown above) showing past, current and proposed geoengineering activities and weather modification activities, supported by a database of almost 300 recorded projects. Databases such as this could form the core of an ongoing monitoring project ideally housed within the Secretariat.

The recommendations from SBSTTA 16 to COP11 (recommendation XVI/9 of UNEP/CBD/COP/ 11/3) include language that would invite Parties to report on measures undertaken to maintain the moratorium and requests that the Executive Secretary compile this information and make it available via the clearinghouse mechanism. This proposal would constitute a minimal but useful first step towards international monitoring and oversight of geoengineering.

Because of the serious transboundary nature of many geoengineering schemes, Parties should, at the least, insist that there is monitoring and reporting of past, current and proposed geoengineering activities, including activities that take place in a controlled laboratory setting.

Beyond the ABC

In ETC Group's view, Delegates to COP11 should also:

D – DEFEND THE ROLE OF THE CBD and SBSTTA

While it is to be welcomed that other intergovernmental bodies are now taking up consideration of geoengineering, the expert paper on legal and governance issues commissioned by the Secretariat demonstrates that the CBD is the appropriate forum to exercise oversight of this field as it impacts biodiversity. The CBD has the necessary legal standing, scientific expertise and among the most universal membership of any relevant convention or treaty.

Other expert bodies such as the scientific groups to the London Convention and Protocol on Ocean Dumping and also the International Panel on Climate Change have both different and narrower mandates and bases of expertise than the Convention on Biological Diversity. Their findings, while a welcome contribution, should not be given undue weight in future decisions nor should their work be allowed to undermine CBD Decision X/33.

In particular the IPCC's Fifth Assessment report (AR5) is not expected to cover wider biodiversity, equity and livelihood questions nor is the IPCC properly constituted to contribute that expertise in those areas. Further, in June 2011, 125 civil society organizations sent an open letter to the IPCC raising concerns about the process by which that body was handling the issue of geoengineering.

Parties at COP11 should guard against making decisions that give undue prominence to reports by entities outside the Convention's own bodies and protocols.

E – ENSURE PROPER CONSULTATION OF INDIGENOUS PEOPLES AND LOCAL COMMUNITIES AND OTHER STAKEHOLDERS

Of the three studies prepared by the Secretariat, the report on views and experiences of Indigenous and Local Communities and Other Stakeholders (UNEP/CBD/SBSTTA/16/INF/30) was carried out with little consultation and resulted in a cursory treatment of the issue. Recognizing this, the summary document UNEP/CBD/SBSTTA/16/10 concludes that "so far the contribution of indigenous peoples to this debate has been very limited and culturally relevant capacity building programmes and information on these issues is scant. Understanding geoengineering impacts from indigenous perspectives is an issue that requires further exploration."

Parties should propose that the Executive Secretary produce a further report in consultation with indigenous peoples and local communities, including peasants organizations, on the potential impacts of geoengineering on biodiversity and associated social, economic and cultural impacts, taking into account gender considerations.

Parties at COP11 should:

A – Affirm the moratorium decision X/33 paragraphs 8w and x

B – Ban open-air geoengineering tests that

1) impact biodiversity or

2) take place in or have impacts on the global commons (atmosphere, oceans, Arctic, Antarctic or outer space) or

3) are intended to develop Solar Radiation Management technologies.

C – Create capacity and mechanisms for monitoring and reporting of past, current and proposed geoengineering activities, including activities that take place in a controlled laboratory setting.

D – Defend the role of CBD and SBSTTA in decision-making on geoengineering by guarding against undue reliance on the work of other bodies, including the IPCC AR5.

E – Ensure indigenous peoples and local communities, including peasants organizations, are consulted on their views and experiences for synthesis by the Executive Secretary and consideration by SBSTTA.

Further information:

Geopiracy: The Case Against Geoengineering (ETC Group 2010)

http://www.etcgroup.org/content/geopiracy-case-against-geoengineering

ETC Group's online resource on Geoengineering:

http://www.etcgroup.org/issues/climate-geoengineering

All of ETC Group's online resources relevant to the CBD:

http://www.etcgroup.org/international-fora/biodiversity-cbd-sbstta-ipbes

ETC Group contacts at COP11

Silvia Ribeiro
silvia@etcgroup.org
(mobile +52 1 55 2653 3330)

Neth Daño
Neth@etcgroup.org
(mobile +63 917 532 9369)

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