Governing the “Big Bad Fix”: Geoengineering, human rights and international law

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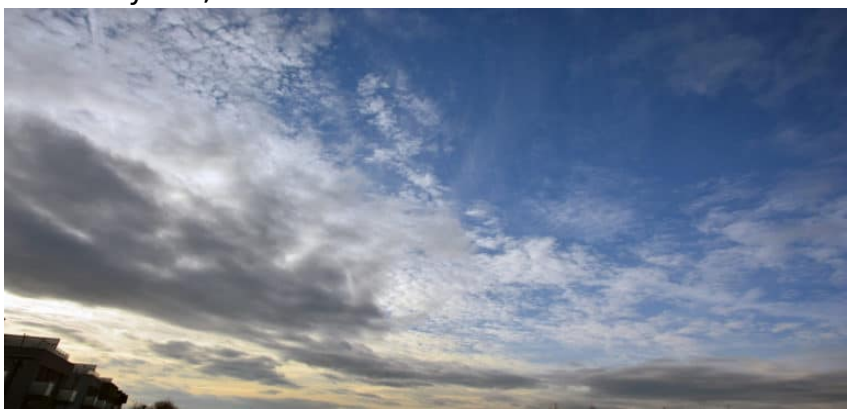

by Duncan Currie, LLB. (Hons.) LL.M., Guest author

Geoengineering – large-scale manipulation of the Earth’s natural systems – is increasingly being presented as a strategy to counteract, dilute or delay climate change without disrupting energy- and resource-intensive economies through mitigation. Most techniques fall into one of two categories: carbon dioxide removal (CDR) or solar radiation management (SRM). Objections to geoengineering are described in the Big Bad Fix. As discussed in an article last October, solar radiation management (SRM) can cause physical, cultural, and political damage by introducing particles into the stratosphere or by artificially altering clouds. The use of SRM could alter global rainfall patterns, damage the ozone layer, and threaten the livelihoods of millions of people.

The second type of geoengineering is carbon dioxide removal (CDR), which means extracting CO 2 from the atmosphere and storing it underground or in the ocean. While one CDR technique, ocean fertilization, has been banned under a moratorium, other CDR approaches are still gaining support. One, “bioenergy with CCS” or BECCS, aims to combine the CO 2 uptake capacity of fast-growing plants with methods for underground storage of CO 2. As with other engineering solutions, the promises are too good to be true. Enormous amounts of land, water and fertilizer would be required to successfully operate BECCS systems enough to affect the global climate, with loss of biodiversity, competition for land and food and displacement of local populations. And as yet no comprehensive audit of energy inputs and outputs, let alone strategic and environmental impact assessments, have been carried out, so any discussion of environmental and social impacts, or assessment of effectiveness, is speculative.

But we do know that there would be massive social and socio-economic effects as well as environmental effects. The world urgently needs an open debate on the research, deployment, and governance of these technologies, taking into account the broad implications including climate change, environmental, cultural, social, economic, intergenerational, ethical and geopolitical issues. While the London Convention has taken steps to regulate ocean fertilization, one form of CDR, and the CBD (Biodiversity Convention) has a moratorium on geoengineering, there have been no moves to regulate or ban solar radiation management techniques or address the social, economic and human rights implications of geoengineering.

As far back as 1992, the Rio Declaration emphasised public participation and the role of women, the role of indigenous and other local communities, reminded us that peace, development and environmental protection are all important, introduced the precautionary approach and the need for environmental impact assessments. Since then, the world has also accepted the need for strategic environmental assessments to assess the effects of policies and plans and to listen to the needs of the people, the need for integrated management and to apply the ecosystem approach.

More recently, in 2015 the world negotiated the 17 sustainable development goals, or SDGs. The SDG goals overwhelmingly are in conflict with geoengineering or its effects, particularly in being contrary to resilience, food security, sustainability and safety. Many geoengineering proposals, particularly BECCS, with its potential effects on

sustainable agriculture, forestry and biodiversity would run directly contrary to Goal 15, being to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss". Marine based geoengineering with harmful effects on the ocean would run counter to the oceans Goal 14, being to conserve and sustainably use the oceans, seas and marine resources for sustainable development.

Geoengineering would risk substantially increasing inequality, since it will introduce an inevitable power imbalance between those which control geoengineering and those which do not. It may also introduce inequality by its differential effects, contrary to Goal 10 to reduce inequality within and among countries. Goal 11 is a goal with which geoengineering is clearly at odd, as it will threaten cities and human settlements in its uneven, unpredictable and unsustainable effects, rather than make cities and human settlements inclusive, safe, resilient and sustainable. Geoengineering by discouraging mitigation and adaptation, if people rely on it rather than addressing the sources of climate change, could encourage and permit unsustainable consumption and production patterns , contrary to Goal 12 to "ensure sustainable consumption and production patterns.

Indigenous peoples have a particular vulnerability to geoengineering, which through its demand for land and changes in use of land can displace them, change their agricultural opportunities, or even deprive them of their forests or lands through land use changes, or through changes in weather such as precipitation or changed temperatures. Human rights instruments such as the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) protect indigenous peoples' right to self-determination, including the right to freely pursue their economic, social and cultural development. UNDRIP requires free, prior and informed consent prior to any relocation, such as may come from land use from BECCS or otherwise, and guarantees the right to participate in decision-making in matters which would affect their rights. They also require free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them.

The indigenous rights ILO Convention safeguards rights to the natural resources pertaining to their lands as well as requires co-ordinated and systematic action to protect the rights of these peoples and to guarantee respect for their integrity. The Convention requires special measures for safeguarding the persons, institutions, property, labour, cultures and environment of the peoples concerned, which may not be contrary to the freely-expressed wishes of the peoples concerned. Storage or disposal of hazardous materials in the lands or territories of indigenous peoples requires prior informed consent; this may be relevant with CO_2 storage proposals.

Regional instruments such as the recently concluded American Declaration on the Rights of Indigenous Peoples strongly reflects indigenous peoples' rights to territory, to a safe and sustainable environment, to protect the environment and to manage their lands, territories and resources in a sustainable way, to prior, free and informed consent from being subject to research programs. The Declaration makes it clear that indigenous peoples in Americas are entitled to prior consent before geoengineering experiments and restitution of compensation for damage caused by them.

Indigenous law aside, broader human rights law is also applicable to geoengineering. Geoengineering can impact the right to food, right to health, right to water, right to life, the right to livelihood and as well as rights to self-determination. Impacts on biodiversity may result in flow-on impacts such as on the rights to food and health. Parties to human rights treaties are not only required to respect human rights but must also take positive steps to protect and fulfil these obligations and take affirmative measures to deter, prevent, investigate and punish violations of human rights by private actors, such as geoengineering experiments or proposals which breach some of these human rights.

Whether it is even possible to apply modern governance methods to techniques as potentially far-reaching as geoengineering remains to be seen. One option is a ban on SRM or on geoengineering as a whole. There is a recent example for this in the recently negotiated nuclear weapons ban treaty as well as in the nuclear test ban: first, a ban on the testing of nuclear weapons was agreed with the Comprehensive Nuclear Test Ban Treaty, then a ban on nuclear weapons was agreed in 2017. Even though the nuclear powers have not joined the Nuclear Weapons Ban Treaty, the world has declared that it does not want these weapons. With marine geoengineering carbon dioxide removal, an early model exists with the CBD moratorium and the London Convention/Protocol assessment framework and recently concluded amendment banning the placement of material in the ocean for unauthorized marine geoengineering activities.

But even a geoengineering ban requires governance for monitoring, compliance and enforcement. The Antarctic Madrid Protocol is a useful example, where mining was banned in Antarctica for 50 years and instead a

comprehensive protocol was put into place. There are many international conventions cover issues ranging from ozone, which would be depleted by some SRM techniques, the injection of sulphur, marine effects, where there is an international marine court, to environmental modification for military or hostile purposes and the World Meteorology Organization. Work on geoengineering to protect our future and the future of our children will need all these conventions, as well in the United Nations General Assembly and the Security Council. In time a stand-alone convention on geoengineering can be envisaged with geoengineering.

Duncan Currie is an international lawyer who has advised NGOs, governments and companies on matters ranging from ocean law and policy, climate change, nuclear power and geoengineering for over 30 years.