



A Global Pact for the Environment - Legal Foundations

Edited by

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CHAPTER 14

Research and Innovation

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Article 13 – Research and innovation

The Parties shall promote, to the best of their ability, the improvement of scientific knowledge of ecosystems and the impact of human activities. They shall cooperate through exchanges of scientific and technological knowledge and by enhancing the development, adaptation, dissemination and transfer of technologies respectful of the environment, including innovative technologies.

I. OVERVIEW

Article 13 has two components. Firstly, it requires States to promote “to the best of their ability” the improvement of scientific knowledge of ecosystems and the impact of human activities (both at the international and national levels). Secondly, they “shall cooperate through exchanges of scientific and technological knowledge and by enhancing the development, adaptation, dissemination and transfer of technologies respectful of the environment, including innovative technologies”.

This broad provision underlines the importance of science and technology in the environmental field and the role States have to play in this respect. Indeed, improving the availability of environmental information and technology is a well-established objective as environmental action relies heavily on knowledge (the status and processes of the environment) and technology (replacement of unsustainable technology but also provision of tools to preserve and rehabilitate)³⁸¹. However, while technology transfer can be a driver of environmental innovation, it can also constitute a risk when unsustainable methods are widely disseminated. This highlights the

³⁸¹ Sands (Ph.), Peel (J.), Fabra (A.), MacKenzie (R.), *Principles of International Environmental Law* (Cambridge University Press, 2018) at 6.

importance of the States' international obligations of cooperation with regard to this specific issue.

Even though article 13 does not mention capacity building, it is evidently geared towards this notion. This term emerged in the lexicon of international organizations during the 1990s. Today, it is commonly used by the United Nations and mentioned in the programs of most international organizations working on development, such as the World Bank. It stands for the strengthening of skills, competencies and capabilities of States – or, at different levels, of people, communities and individuals – in their self-development. Here, scientific and technical cooperation are identified as two means serving the same end.

II. HISTORICAL DEVELOPMENT

Article 13 of the draft for the Global pact echoes principle 20 of the Stockholm Declaration (1972), the World Charter for nature (1982) and principle 9 of the Rio Declaration (1992). According to principle 20 of the Stockholm Declaration³⁸²,

‘Scientific research and development in the context of environmental problems, both national and multinational, must be promoted in all countries, especially the developing countries. In this connection, the free flow of up-to-date scientific information and transfer of experience must be supported and assisted, to facilitate the solution of environmental problems; environmental technologies should be made available to developing countries on terms which would encourage their wide dissemination without constituting an economic burden on the developing countries’.

In 1982, the World Charter for Nature reiterated and broadened this provision³⁸³ and the Rio Principle 9, in 1992, built on these previous instruments by stating that:

‘States should cooperate to strengthen endogenous capacity-building for sustainable development by improving scientific understanding through exchanges of scientific and technological knowledge, and by enhancing the development, adaptation, diffusion and transfer of technologies, including new and innovative technologies’

³⁸² ‘Declaration of the United Nations Conference on the Human Environment’, Stockholm, 16 June 1972, UN Doc. A/CONF 48/14/Rev.1.

³⁸³ AG UN, A/RES/37/7, 28 October 1982, ‘World Charter for Nature’, §18.

As before, this principle aimed at encouraging scientific and technical cooperation between States in order to “*strengthen endogenous capacity-building for sustainable development*”. The 1992 wording is, however, softer. In 1972, Principle 20 of the Stockholm Declaration had been strongly influenced by calls for a new international economic order. Indeed the Stockholm Declaration used the word “*must*” where the Rio Declaration used “*should*”. Moreover, Stockholm Principle 20 referred to a “*free flow*” of scientific information and transfer of experience, a “*wide dissemination*” or even to the need not to cause “*an economic burden on the developing countries*”. Principle 9 of the Rio Declaration reflects a more balanced vision between expectations and claims of the North and the South.

The Global Pact’s draft builds on these previous instruments. However, Article 13 uses a stronger language than Principle 9 (*shall*) and aims at being politically neutral by referring to all States without putting an emphasis on developing countries.

III. MAIN FORMULATIONS IN INTERNATIONAL INSTRUMENTS

The rationale of draft article 13 – the promotion, enabling and diffusion of research and innovation through international cooperation – can be found in all multilateral environmental agreements. Indeed, provisions encouraging scientific and technical cooperation between signatories are among the common minimal requirements of conventional international environmental law. Additionally, the establishment of expert scientific bodies to support implementation and development has become a common feature of modern international agreements. These bodies aim at establishing an interface between science and policy by providing advice on scientific matters to the parties. Among many other functions, they can highlight research priorities or provide assessments on the impact of new technologies³⁸⁴. As for technology transfer, this topic is addressed in very detailed provisions in several international regimes, each of them having their own specificities. For instance, the parties to the Convention on Biological Diversity (CBD) have elaborated a rich set of principles, rules and recommendations in order to address the numerous challenges of technology transfer for the conservation and sustainable use of biodiversity³⁸⁵. The

³⁸⁴ For instance, article 25 of the Convention on Biological Diversity states that the “Subsidiary Body on Scientific, Technical and Technological Advice” shall “*identify innovative, efficient and state-of-the-art technologies and know-how relating to the conservation and sustainable use of biological diversity and advise on the ways and means of promoting development and/or transferring such technologies*”.

³⁸⁵ Ntona (M.), « Technology transfer », in Morgera (E.), Razaque (J.) (eds.), *Biodiversity and nature protection law* (Edward Elgar, 2017).

same goes for the United Nations Framework Convention on Climate Change under which specific mechanisms were set up for technology transfer³⁸⁶.

Beyond the provisions of international environmental agreements, the principle codified in article 13 has also led to an institutional and policy effervescence.

With regard to the promotion of environmental research and innovation, several international programs can be mentioned. For instance, at the European level, the H2020 program³⁸⁷ has set several research priorities for the future development of the European Union (EU). Among these priorities, several have an environmental dimension and research projects that can contribute to these priorities are eligible to funding. In this way, the EU is promoting and orienting environmental research and innovation. At the international level, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is also promoting research by specifically identifying knowledge gaps for environmental governance, and thus possibly orienting future research.

To favour the endogenous development of States, particularly developing ones, several funding mechanisms have been set up, both within multilateral agreements and independently. In this regard, the Global Fund for the Environment is a topical example of a multilateral initiative that can contribute to the goals of article 13. This institution was established in 1991 by the World Bank and gradually became a financial tool for the implementation of several environmental agreements. Its main purpose is to provide financial assistance to developing countries so they may successfully implement their environmental commitments. In doing so, the GEF can help to strengthen the capabilities of countries with regard to research and innovation.

Finally, the diffusion of the results of research and innovation has also been a primordial goal for several international initiatives. The diffusion of knowledge, in the form of research results, is favoured by institutions such as the Intergovernmental Panel on Climate Change (IPCC) or IPBES, that elaborate up-to-date scientific assessments on specific environmental matters. This diffusion is also favoured by the growing number of initiatives relating to open access of scientific results. This tendency has gained significant traction over the past years and is a precious tool for

³⁸⁶ Sarnoff (J.), « Intellectual property and climate change, with an emphasis on patents and technology transfer », in Carlane (C.), Gray (K.), Tarasofsky (R.) (eds.), *The Oxford Handbook of International Climate Change Law* (OUP, 2016).

³⁸⁷ Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) and repealing Decision No 1982/2006/EC (OJEU L347, 20.12.2013).

a wide democratization of access to knowledge. As for technology transfer, multiple international initiatives aiming at supporting the effective diffusion of environmentally sound technologies can be mentioned. For instance, the United Nations Conference on Trade and Development (UNCTAD) and the World Intellectual Property Organization (WIPO) have been working on assisting states with regard to this matter.

These examples are, of course, non-exhaustive, but nevertheless highlight how fertile international cooperation is in the field of research and innovation for environmental governance.

IV. CONCEPTUAL QUESTIONS

On a conceptual level, draft article 13 raises several questions. Firstly, its interaction with other articles of the Global Pact and secondly, its normative nature among the other principles of international environmental law.

Article 13 on research and innovation has obvious ties with article 9 on public participation, article 12 on education and training and article 18 on cooperation. It could be said that article 13 should not be read in isolation from these articles: they are all dependent on their respective full implementation in order to effectively reach their goals. Without proper education and training, the development of research and innovation in the field of environment will be hindered. And without making the results of research and innovation available to the public, its participation will yield fewer results. Reaching the goals of article 13 is only possible through the fulfilment of these articles, and arguably of all the Global Pact (and vice-versa).

The principle codified in draft article 13 has a particular normative nature. To our knowledge, the principle of international cooperation for research and innovation has never been referred to in any judicial decisions. This is understandable as this principle cannot be read as one that specifically dictates a precise type of conduct from States, as, for instance the prevention principle or the polluter-pays principle. It calls for States to act to the best of their ability to promote research and innovation through international cooperation. As such, it is difficult to specifically identify a conduct that would constitute a breach of this principle. Therefore, the principle does not fit into a traditional approach to international law that tries to impose a precise type of conduct on states and hold them responsible in case of failure. Yet this does not mean that such a provision serves no legal purpose.

It could be said that article 13 is more strategic than normative. By strategic, we mean that this principle is a paradigm setter: it aims at shaping the context in which the other more normative principles are applied. For instance, by strengthening environmental research and innovation, parties will be better equipped to ensure the full effectiveness of rules such as the prevention of environmental harm, or the polluter-pays principle. The same could be said for the provisions on training and education or on cooperation. Consequently, although it does not display its effect in the same way as normative principles, it is nevertheless a primordial pillar of international environmental law in that it also contributes to the effectiveness of this legal branch.

V. ASSESSMENT

Since the first formulation of the principle, and alongside its numerous reiterations, our knowledge of the environment has grown significantly³⁸⁸. But despite technological and scientific progress, several problems remain.

For instance, the interface between science and policy remains problematic when it comes to environmental decision-making³⁸⁹. Among many issues, we can mention the interactions between the scientific bodies of the various MEAs that are still insufficiently streamlined, with some duplication in the reporting, monitoring and assessment efforts³⁹⁰.

Also, the ‘[enhancement], development, adaptation, diffusion and transfer of technologies, including new and innovative technologies’ is often complicated. Indeed, the process of selecting and operating environmentally sound technologies is not a simple one, and as noted before:

‘Selecting a technology that is suitable for local needs, adapting it to local conditions, and maintaining it requires substantial skills and information. Yet, the recipients of technology transfers have limited access to information and limited technical capacity,

³⁸⁸ Though it is difficult to directly link this increase of knowledge to the influence of the principle.

³⁸⁹ United Nations Environment Programme, *Strengthening the Science-policy Interface: A Gap Analysis* (UNEP, 2017).

³⁹⁰ International institutions are currently trying to tackle this issue. See for instance, CBD, Decision XIII/24, Cooperation with other conventions and international organizations (December 2016).

underscoring the need for an information clearinghouse on various abatement technologies'.³⁹¹

Additionally, intellectual property rights represent another concern with respect to technology transfer. These rights, that are strongly supported by industrialized countries, in particular the US, who see them as an 'essential component of any international technology cooperation [...] essential to provide incentives for innovation in the development of environmentally sound and appropriate technologies'³⁹², can go against the logic of draft article 13. On the one hand, economic actors seek, quite naturally, to protect their own interests, supported by powerful institutions. And on the other hand, international regimes that aim at facilitating technology transfers suffer from weak and overlapping mandates³⁹³. Yet, capacity-building and technology transfers to developing countries have been a key for the green economy policies in past decades.³⁹⁴

From Rio 1992 to Rio 2012 or the 2015 climate COP 21, the calls to effectively transfer environmentally sound technologies³⁹⁵ have been reiterated with little success. Reiterating this principle in the Global Pact is necessary in order to establish a better balance between private and public interests when it comes to research and innovation and thus facilitate the ecological transition of our societies at the Anthropocene³⁹⁶.

³⁹¹ Esty (D.), Ivanova (M.), 'Revitalizing Global Environmental Governance: A Function-Driven Approach', in Esty (D.) Ivanova (M.) (eds.), *Global Environmental Governance: options & opportunities* (Yale School of forestry and environmental Studies, 2002), 16.

³⁹² See *Report of the United Nations Conference on Environment and Development*, A/CONF.151/26/Rev.1, Vol. II, *Proceedings of the Conference*, ONU, New York, 1993 at 18.

³⁹³ Maljean-Dubois (S.), "Principle 9 Science and technology", in Vinuales (J.) *The Rio declaration on environment and development A Commentary* (OUP, 2015).

³⁹⁴ See this document, Paragraphs 58, 65-66, 73-74, 277.

³⁹⁵ AG UN, A/RES/66/288, 'The Future we want', 27 July 2012, §73.

³⁹⁶ On the legal challenges of the Anthropocene to environmental law, see Kotzé (L.) (ed.), *Environmental law and governance for the Anthropocene* (Hart, 2017).