Part 3: ‘Fallacious and wrongheaded’ — The Cartagena Protocol’s categorization of ‘living products’ of agricultural biotechnology as GMOs was a ‘nonsensical’ blunder that disrupted technological innovation and trade

Ten years after the coming into force of the Cartagena Protocol, its own supporters noted that effective implementation was fragmentary and lacking, with a tendency to dedicate increasingly less attention and resources on the part of the signatories (Hurtado 2013), many of whom “still do not have the necessary capacity in place at the national level to implement the Protocol. And they appear to have no prospects for developing it in the foreseeable future.” (Komen 2012, p. 82) This has not prevented investing (wasting!) time and resources to add further rules.

As already for the Convention on biodiversity, a permanent institution linked to the Cartagena Protocol is the “Conference of the Parties, COP” (Art. 29), which is called on a more or less regular basis (roughly every two years) and has the power to approve amendments to the treaty: the only important addition compared to the original text is the “Nagoya – Kuala Lumpur Supplementary Protocol on Liability and Redress” (Convention on Biological Diversity 2010b) (3), the result of the fifth COP which was held in 2010 in Nagoya, Japan, following discussions which had been going on for six years. These additional provisions are the implementation of Art. 27 of Cartagena (Liability and Redress). The emphasis is placed on the measures to be taken “in the event something goes wrong and biodiversity suffers or is likely to suffer damage” (Introduction) from cross-boundary movements of “LMOs”. The purpose of this addendum would be “providing international rules and procedures in the field of liability and redress relating to living modified organisms” (Art. 1. Objective): as is clear, it is insinuated again that serious problems can arise from these goods, all indistinctly full of alleged risks; problems to be faced by ascertaining damages and imposing compensation payments.

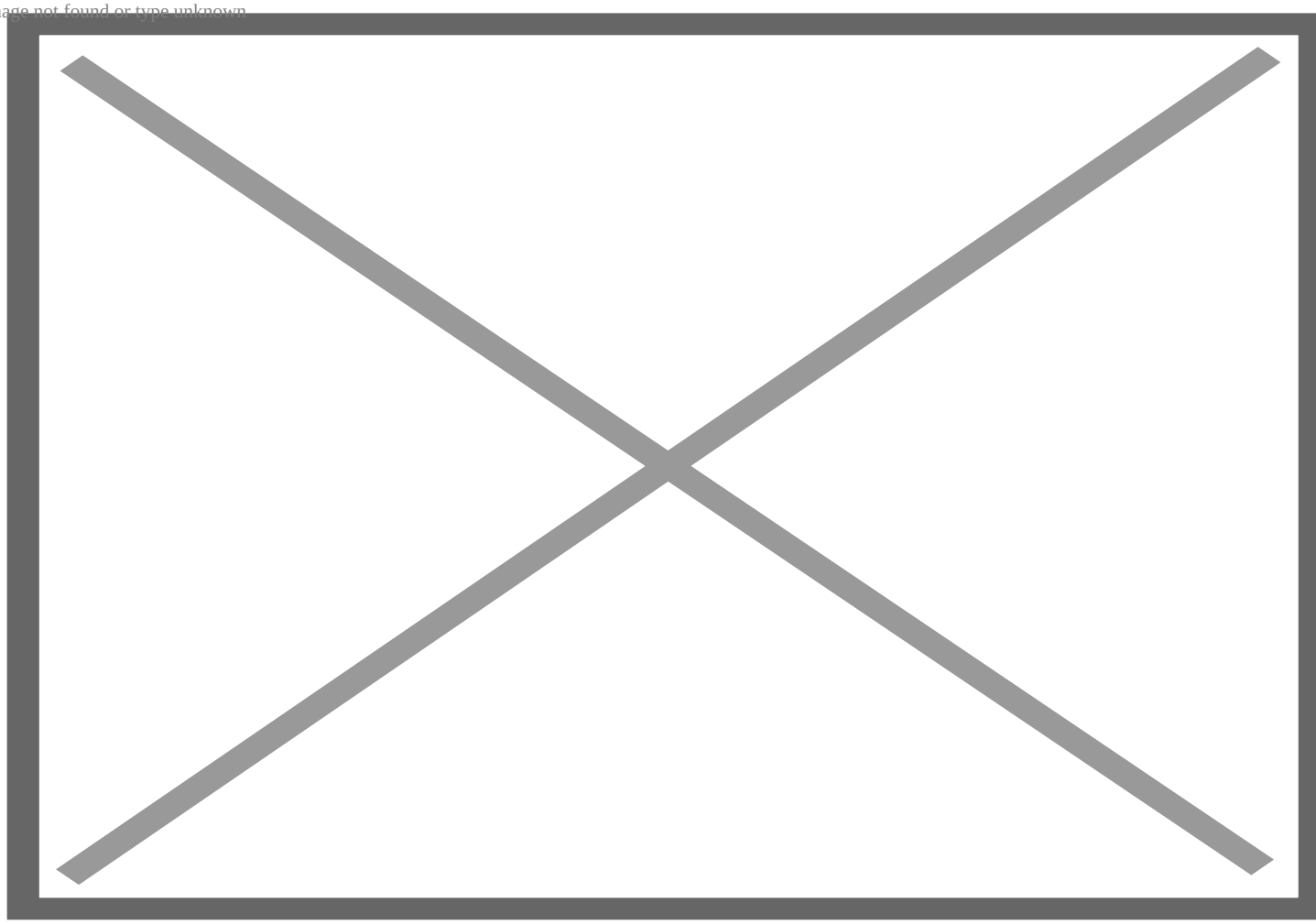
[su_panel color=”#3A3A3A” border=”1px solid #3A3A3A” radius=”2? text_align=”left”]This is the final part of a three-part series.

- **Part 1: Viewpoint — ‘Misguided and counterproductive’: Why the world needs to scrap the Cartagena Safety Protocol that influences regulation and impedes global trade of GM seeds and plants**
- **Part 2: Viewpoint — Digging into the ‘prejudices’ that have plagued the Cartagena Protocol’s mis-guidance on agricultural biotechnology regulations[/su_panel]**

Are these further pre-emptive efforts reasonable? Thinking of current or future “LMO-GMO” cultivars – or, for that matter, cultivars obtained with *any* biotechnology – how can it simply be hypothesized that some import-export activity generates such damage to biodiversity as to require compensation? The clause on responsibility, as is the case in many contracts between private individuals, explicitly excludes unforeseeable events, or causes of force majeure, or wars or revolts (Art. 6. Exemptions). And yet, evenin these extreme cases, we cannot envisage any scenario in which corn resistant to drought, rice tolerantto prolonged submersion, fruits made immune to viruses, or similar agricultural products, which havealready been declared safe and healthy in the countries of origin, may cause damage to the environmentor to health if they cross borders.

Anyway, cases of damage and subsequent compensation could be simply governed by the commercial rules in force for import-export. The supplementary Protocol recognizes that the states can “Apply their existing domestic law, including, where applicable, general rules and procedures on civil liability”, but can also “Apply or develop civil liability rules and procedures specifically for this purpose” (Art. 12. Implementation and relation to civil liability): therefore, it is not clear why any damage to biodiversity caused by transboundary movements of “LMOs” and the related redress should be subject to special attention. Moreover, if we think that international civil liability cases for damage to the environment or health from transboundary movements of agricultural goods are too weakly protected by the usual instruments, and so require a more robust judicial-legal background, to be coherent, the potentially harmful products to be protected against should be *all* products: so rules should be established “regulating the importation of all living organisms through existing quarantine rules and the like, irrespective of how they were developed. As a scientific matter, the question would be whether a particular seed or organism posed an ecological threat due to its particular characteristics, not whether it was manipulated with rDNA techniques.” (Adler 2000a, p. 192) In the remote, imaginary hypothesis that the cross-boundary movement of a vegetal organism obtained through tissue culture or induced mutagenesis, or any method which does not create a “LMO-GMO”, might prove tremendously invasive or annoyingly allergenic, the Protocols of Cartagena and Nagoya – Kuala Lumpur would not provide the slightest grounds for contesting the damage against whoever caused it.

Image not found or type unknown



Convention on Biological Diversity Nagoya. Credit: Franz Dejon

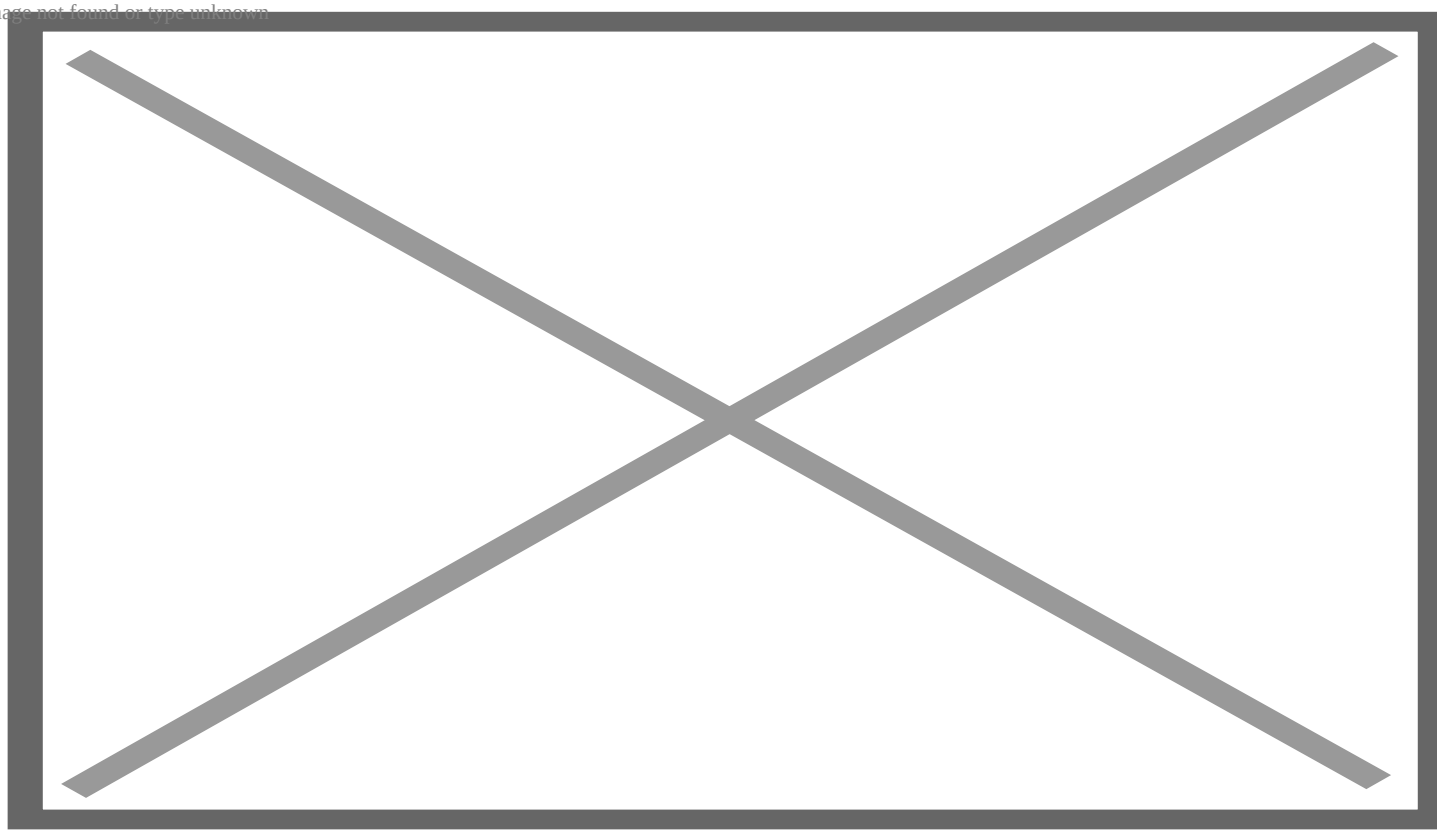
In addition, strong criticism stigmatizes the counterproductive brake placed on new technologies: nobody will be held responsible for the damage from the failure to circulate new cultivars transnationally, when they are pointlessly impeded but would be useful to combat poverty. The Cartagena Protocol, with the addition of Nagoya – Kuala Lumpur, “has extended its reach to include a supplementary treaty on liability. The assumption under this regime is that adopting biotechnology carries irreversible risks and stopping the technology does not carry any risks. In other words, those who promote the adoption of new technologies in light of future threats such as famine face legal challenges. Yet those who persecute new technologies and whose actions lead to long-term damage due to foregone benefits are hardly held to account.” (Juma 2013)

We ruefully note that the initial philosophy of the Convention on biodiversity has been completely lost, while, first with the Protocol of Cartagena and then with the additional one of Nagoya – Kuala Lumpur, the approach to “LMO-GMOs” is now purely defensive – defending against generic ghosts: any reference to the benefits which modern biotechnologies may bring has disappeared without leaving any trace. The

matter is particularly disappointing: at the time of approving the Cartagena Protocol (2000) the experience in the field of recombinant DNA crops was limited to just a few years, and so the hyper-cautious attitude, while being far from acceptable, could at least have appeared not completely absurd; indeed, a decade later the international negotiators no longer have any excuses. According to widespread experience, “LMO-GMO” organisms authorized in this or that country have not shown even the slightest of the feared serious defects in terms of the environment and health, given that unfortunate experiments of new foods have rightly been discarded at birth; and yet the regulatory approach, instead of focusing on examination of the individual products, insists on frowning on the most advanced biotechnological processes. Another wasted opportunity to target limited resources on what really counts, i.e. the defence of increasingly devastated biodiversity (4).

In this sense, the additional protocol to that of Cartagena adds pointlessness to pointlessness – or, worse, damage to damage. Or perhaps not, because the added Protocol eventually came into force on the 5th March 2018 (https://bch.cbd.int/protocol/parties/#tab=1. Update on 5 March 2018): yet, it is likely to remain dead letter. One of the negotiators of the Protocol of Nagoya – Kuala Lumpur, a judicial and legal expert, the editor of a book which brings together the contributions of various key players in the discussions, wrote: “unlike oil spills polluting the ocean or nuclear power plant accidents spreading radioactive material, there has not yet been a scientifically confirmed case of environmental damage caused by LMOs. The treaty negotiators were tackling a hypothetical problem of environmental damage that may eventually be caused by LMOs without any actual experience of it.” (Shibata 2013, p. 9)

Image not found or type unknown



Mauritius oil spill. Credit: ORF

Thus, a protagonist confesses the inconsistency of the subject of his work, and this reiterates two important points: first, confirmation that any comparison between the real damage due to pollution from hydrocarbons or radioactive leaks and the hypothetical risks from “LMO-GMOs” (including international transport) is nonsensical; second, that forty years on from the fears which had already been scaled back at the Asilomar conference (Berg 2008) and after a quarter century of mass cultivation and consumption of recombinant DNA food and feed, we do not have to worry about imaginary damage from cross-border movements of the various agri-food products, much less of “LMOs”: a prejudice which, on the other hand, has inspired the legal hot air and notable waste of time and resources of the Protocols of Cartagena and Nagoya – Kuala Lumpur.

Conclusion

The purpose of this paper is to clarify that “GMO” is an unscientific meme that, among several misleading effects, has generated a fallacious, wrongheaded juridical/legal mindset: at the international level, this gigantic blunder has resulted in a costly and detrimental framework which took the form of the Cartagena Protocol on Biosafety and its addition, the Nagoya – Kuala Lumpur Supplementary Protocol. As we have seen, the scope of the Cartagena Protocol is wide in its definition: it starts from the biosafety issue, with relation to possible impacts of “LMOs” both on biodiversity and on health; but, being a treaty which involves international trade, it has to deal with the difficult relationship with the WTO agreed rules – and it

is clear how problematic this can be.

Follow the latest news and policy debates on sustainable agriculture, biomedicine, and other ‘disruptive’ innovations. Subscribe to our newsletter.
SIGN UP

The absurd and counterproductive “GMO” imbroglio should have never seen the light of day: it is time to eradicate this theoretical and empirical weed. Consequently, the Cartagena and Nagoya – Kuala Lumpur Protocols should simply be scrapped, while the precious resources that have been wasted for many years may find a good use in implementing the spirit and the letter of the original Convention on Biological Diversity. As far as we are allowed to make a prediction, this will not happen: rather, it is to be hoped that the two unfortunate treaties will be increasingly ignored and slowly mummify, quietly sliding into the dustbin of history.

Notes:

(1) The Introduction is not part of the text of the Protocol but appears in the official booklet published in English.

(2) Various experts comment on the article; even when they do not openly support dumping of the Protocol, they highlight its inadequacy: www.scidev.net/global/policy/opinion/the-cartagena-protocol-the-debate-goes-on.html (accessed 30 October 2019).

(3) This must not be confused with the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (Convention on Biological Diversity 2010c), a treaty which was also approved in 2010 in the same location and is directly connected to the Convention on Biodiversity.

(4) “We continue to lose biodiversity at a rate never before seen in history – extinction rates may be up to 1,000 times higher than the historical background rate.” (Convention on Biological Diversity 2010a, Message from the Executive Secretary, p. 2)

References:

Adler, Jonathan H. 2000a. More Sorry than Safe: Assessing the Precautionary Principle and the Proposed International Biosafety Protocol. Texas International Law Journal 35:173-205.
http://scholarlycommons.law.case.edu/faculty_publications/226

Adler Jonathan H. 2000b. The Cartagena Protocol and Biological Diversity: Biosafe or Biosorry? Georgetown International Environmental Law Review 12:761-777.
http://scholarlycommons.law.case.edu/faculty_publications/190

Allen, Kate. 2013. Meet Calestous Juma, Africa's genetically modified crop 'optimist'. Toronto Star, June 17. www.thestar.com/news/world/2013/06/17/meet_calestous_juma_africas_genetically_modified_crop_optimist.

American Phytopathological Society. 2001. Biotechnology and Its Application to Plant Pathology.

www.apsnet.org/members/outreach/ppb/positionstatements/Pages/Biotechnology.aspx

American Society for Cell Biology. 2009. Statement in Support of Research on Genetically Modified Organisms. www.ascb.org/index.php?option=com_content&view=article&id=315&Itemid=31

American Society for Microbiology. 2000. Statement on Genetically Modified Organisms. www.asm.org/index.php?option=com_content&view=article&id=3656&Itemid=341

American Society of Plant Biologists. 2006. Statement on Plant Genetic Engineering.

http://my.aspb.org/resource/group/6d461cb9-5b79-4571-a164-924fa40395a5/statements/genetic_engineering.pdf

Ammann, Klaus. 2014. Genomic Misconception: A fresh look at the biosafety of transgenic and conventional crops. A plea for a process agnostic regulation. New Biotechnology 31:1-17.

Arber, Werner. 2010. Genetic engineering compared to natural genetic variations. New Biotechnology 27:517-521.

BASF (2018) Clearfield® Production Systems. https://agriculture.basf.com/us/en/Crop-Protection/Clearfield.html

Berg, Paul. 2008. Meetings that changed the world: Asilomar 1975: DNA modification secured. Nature 455:290-291.

Bernauer, Thomas, and Philipp Aerni. 2008. Trade Conflict Over Genetically Modified Organisms. Pp. 183-193 in Handbook on Trade and the Environment, edited by Kevin P. Gallagher. Cheltenham: Edward Elgar.

Buechle, Kurt. 2001. The Great Global Promise of Genetically Modified Organisms: Overcoming Fear, Misconceptions, and the Cartagena Protocol on Biosafety. Indiana Journal of Global Legal Studies 9:283-324.

Cantley, Mark. 1995. The Regulation of Modern Biotechnology: A Historical and European Perspective: A Case Study in How Societies Cope with New Knowledge in the Last Quarter of the Twentieth Century. Pp. 508-681 in Biotechnology, edited by H.-J. Rehm and G. Reed. Weinheim: Wiley-VCH Verlag.

Colorado State University, Department of Soil and Crop Sciences. 2004. Discontinued Transgenic Products. http://cls.casa.colostate.edu/transgeniccrops/defunct.html

Convention on Biological Diversity. 1992. Convention on Biological Diversity (text of the treaty), Rio de Janeiro: United Nations, 5 June 1992. www.cbd.int/convention/text

Convention on Biological Diversity. 2000. Cartagena Protocol on Biosafety to the Convention on Biological Diversity: text and annexes, Montreal: Secretariat of the Convention on Biological Diversity, 2000. http://bch.cbd.int/database/attachment/?id=10694

Convention on Biological Diversity. 2010a. Global Biodiversity Outlook 3 – Executive Summary. www.cbd.int/gbo3

Convention on Biological Diversity. 2010b. Nagoya – Kuala Lumpur Supplementary Protocol on Liability and Redress. http://bch.cbd.int/protocol/NKL_text.shtml

Convention on Biological Diversity. 2010c. Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization. www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf

Dubock, Adrian. 2014. The politics of Golden Rice. GM Crops & Food 5:210-222.

FAO-IAEA – Food and Agriculture Organization of the United Nations, International Atomic Energy Agency. 2017. Mutant Variety and Genetic Stock (MVGS) Database, http://mvgs.iaea.org

Guruswamy, Lakshman D. 2002. Sustainable Agriculture: Do GMOs Imperil Biosafety? Indiana Journal of Global Legal Studies 9:461-500. www.repository.law.indiana.edu/cgi/viewcontent.cgi?article=1243&context=ijgls

Herring, Ronald J. 2010. Framing the GMO: Epistemic Brokers, Authoritative Knowledge, and Diffusion of Opposition to Biotechnology. Pp. 78-96 in The Diffusion of Social Movements: Actors, Mechanisms, and Political Effects, edited by Kolins Givan, Rebecca, Kenneth M. Roberts, and Sarah H. Soule. Cambridge, Mass.: Cambridge University Press.

Hobbs, Anna L., Jill E. Hobbs, and William A. Kerr. 2005. The Biosafety Protocol: Multilateral Agreement on Protecting the Environment or Protectionist Club? Journal of World Trade 39:281-300.

Hurtado, María Elena. 2013. Ten years in: Taking stock of the biosafety protocol. SciDevNet (website), 28 September. www.scidev.net/global/gm/feature/ten-years-in-taking-stock-of-the-biosafety-protocol.html

ISAAA – International Service for the Acquisition of Agri-biotech Applications. 2019. Brief 54: Global Status of Commercialized Biotech/GM Crops: 2018. Ithaca (NY): ISAAA. www.isaaa.org/resources/publications/briefs/54/

IUCN – International Union for the Conservation of Nature. 2007. Current Knowledge of the Impacts of

Genetically Modified Organisms on Biodiversity and Human Health. http://cmsdata.iucn.org/downloads/ip_gmo_09_2007_1_.pdf

Juma, Calestous. 2013. Persecuting Biotechnology. Technology and Policy (website), 11 January 2013. www.belfercenter.org/publication/persecuting-biotechnology

Kerr, William A., Stuart Smyth, Peter W.B. Phillips, and Martin Phillipson. 2014. Conflicting Rules for the International Trade of GM Products: Does International Law Provide a Solution? AgBioForum 17:2. www.agbioforum.org/v17n2/v17n2a02-kerr.htm

Kinderlerer, Julian. 2008. The Cartagena Protocol on Biosafety. Collection of Biosafety Reviews 4:12-65. www.icgeb.org/~bsafesrv/pdffiles/Kinderlerer.pdf

Komen, John. 2012. The emerging international regulatory framework for biotechnology. GM Crops and Food 3:78-84.

National Research Council. 2004. Safety of Genetically Engineered Foods. Washington, DC: National Academy Press.

Nature Biotechnology. 2000. Swapping science for consensus in Montreal (Opinion – editorial). Nature Biotechnology 18:239.

Nicolia, Alessandro, Alberto Manzo, Fabio Veronesi, and Daniele Rosellini. 2014. An overview of the last 10 years of genetically engineered crop safety research. Critical Reviews in Biotechnology 34:77-88.

OECD – Organisation For Economic Co-Operation And Development. 1986. Recombinant DNA safety considerations. Paris: OECD.

Prakash, Channapatna S. et al. 2000-2014. Scientists In Support Of Agricultural Biotechnology (declaration and petition). www.agbioworld.org/declaration/petition/petition.php

Shibata, Akiho. 2013. Introduction. Pp. 1-14 in International Liability Regime for Biodiversity Damage: The Nagoya-Kuala Lumpur Supplementary Protocol, edited by Akiho Shibata. London: Routledge. http://www2.kobe-u.ac.jp/~akihos/en/grenoble_docs/30Shibata_intro2013.pdf

Smith, Frances B. 2000. The Biosafety Protocol: The Real Losers Are the Developing Countries, Washington, DC: National Legal Center for the Public Interest. https://www.heartland.org/publications-resources/publications/the-biosafety-protocol-the-real-losers-are-developing-countries

Tagliabue, Giovanni. 2016a. The Precautionary principle: Its misunderstandings and misuses in relation to “GMOs”. New Biotechnology, 33:437-439.

Tagliabue, Giovanni. 2016b. The necessary “GMO” denialism and scientific consensus, Journal of Science Communication, 15:1-11. http://jcom.sissa.it/archive/15/04/JCOM_1504_2016_Y01

Tagliabue, Giovanni. 2017. Product, not process! Explaining a basic concept in agricultural

biotechnologies and food safety. Life Sciences, Society and Policy, 2017, 13:3:1-9. http://rdcu.be/pKBe

United Nations. 1992. Report of the United Nations Conference on Environment and Development, Annex I: Rio Declaration on Environment and Development. www.un.org/documents/ga/conf151/aconf15126-1annex1.htm

Ventura, Arnoldo. 2006. Do we still need the Cartagena Protocol? SciDevNet (website), 12 April. www.scidev.net/global/biotechnology/opinion/do-we-still-need-the-cartagena-protocol.html

WHO -World Health Organization. 2005. Modern food biotechnology, human health and development: An evidence-based study, Geneva: WHO. www.who.int/foodsafety/publications/biotech/biotech_en.pdf

WTO – World Trade Organization. 2006. Reports out on biotech disputes. www.wto.org/english/news_e/news06_e/291r_e.htm

WTO – World Trade Organization. 2010. Dispute DS291 European Communities – Measures Affecting the Approval and Marketing of Biotech Products, up-to-date at 24 February 2010. www.wto.org/english/tratop_e/dispu_e/cases_e/ds291_e.htm

Dr. Giovanni Molteni Tagliabue is an independent researcher based in Italy who studies and reports on the philosophy of life sciences and political science. He specializes in epistemological, socio-political and legislative aspects of agricultural biotechnologies and is the recipient of the 2017 Innoplanta Science Prize.

A version of this article was originally published at European Scientist and has been republished here with permission. European Scientist can be found on Twitter @EuropeScientist