

[Home](#) > [International Environmental Agreements: Politics, Law and Economics](#) > [Article](#)

# An economic analysis of international environmental rights

Original Paper | Published: 19 October 2019


Volume 19, pages 557–575, (2019) [Cite this article](#)



## [International Environmental Agreements: Politics, Law and Economics](#)

[Aims and scope](#) →

[Submit manuscript](#) →



[Jesse L. Reynolds](#)  [orcid.org/0000-0002-0624-5741](https://orcid.org/0000-0002-0624-5741)<sup>1</sup>

 **524** Accesses  **4** Citations  **6** Altmetric  **1** Mention [Explore all metrics](#) →

## Abstract

This article offers a descriptive and normative economic analysis of international environmental rights. States, sovereignty, international negotiations, and international law resemble legal persons, property, the market, and private law, respectively. Just as the initial entitlement of persons' property rights is important to increasing welfare when transaction costs are significant, so too is that of states' sovereignty rights, including those regarding the environment. What is the initial entitlement of these rights? Is this relatively efficient? How are these rights protected? The article considers three possible initial entitlements. First, states' right to cause transboundary environmental harm and, second, their right to be free therefrom are each rejected due to weak theoretical support and insufficient state practice. These initial entitlements would also be less efficient. In contrast,

an initial entitlement consisting of both the prevention of transboundary harm and the equitable use of shared natural resources is supported by theory and practice. This entitlement appears relatively efficient, and the relevant legal instruments reveal an implicit underlying economic logic. These international environmental rights are generally protected by mechanisms that resemble liability.

 This is a preview of subscription content, [log in via an institution](#)  to check access.

### Access this article

[Log in via an institution](#) →

[Buy article PDF 39,95 €](#)

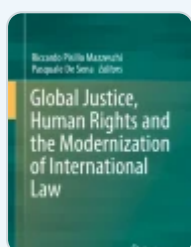
Price includes VAT (Poland)

Instant access to the full article PDF.

Rent this article via [DeepDyve](#) 

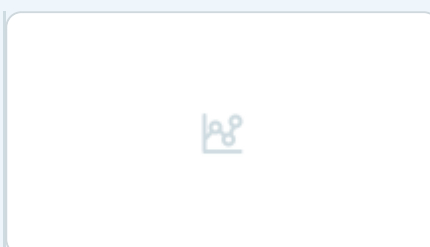
[Institutional subscriptions](#) →

### Similar content being viewed by others



**The Influence of Environmental Protection on the Fabric of International Law**

Chapter | © 2018



**Lessons learnt from two decades of international environmental agreements: law**

Article | Open access

16 April 2022



**Environmental Regulation Models**

Chapter | © 2017

# Notes

---

1. To be specific, welfare is the satisfaction of preferences, which can presumably be transitively ranked and can be revealed through behavior. A voluntary trade or other action by a perfectly informed actor with negligible negative third-party impacts necessarily increases welfare, or at least does not decrease it. In reality, behavior can be involuntary and have negative impacts, and information is often imperfect.

Claims regarding efficiency generally require aggregating multiple actors' welfares, yet perfect interpersonal welfare comparisons are impossible. Economists thus often point to Pareto improvements, in which at least one actor's welfare increases and no actor's welfare decreases, and to Kaldor-Hicks improvements, in which those who are made better off would be (at least hypothetically) willing to compensate those who are made worse off. In this paper, claims of relative efficiency refer to Kaldor-Hicks improvements.

2. Here, "transaction costs" are used broadly to encompass all obstacles—including poorly defined property rights—to reaching an agreement regarding a transaction.

3. This analogy is at least as old as Holland ([1924](#): 393-394).

4. Trachtman ([2008](#): 8) calls it a market in jurisdiction.

5. This analogy can be traced to Lauterpacht ([1927](#)). For an economic analysis of customary international law, see De Mot et al. ([2017](#)).

6. When cash is used, it is often disguised, such as "development aid."

7. Treaty between the Government of Canada and the Government of the United States of America Concerning Pacific Salmon, January 28, 1985, in force

March 18, 1985. Available at

<http://www.psc.org/download/45/miscellaneous/2337/treaty.pdf>.

8. International Telecommunication Convention, Final Protocol, Additional Protocols, Resolutions, Recommendations and Opinions, October 25, 1973, in force January 1, 1975. Available at <http://search.itu.int/history/HistoryDigitalCollectionDocLibrary/5.10.61.en.100.pdf>.
9. UN General Assembly Resolution A/Res/523(VI), of January 12, 1952, on Integrated Economic Development and Commercial Agreements. Available at [http://daccess-ods.un.org/access.nsf/Get?OpenAgent&DS=A/RES/523\(VI\)&Lang=E&Area=RESOLUTION](http://daccess-ods.un.org/access.nsf/Get?OpenAgent&DS=A/RES/523(VI)&Lang=E&Area=RESOLUTION); UN General Assembly Resolution A/Res/626(VII), of December 21, 1952, on the Right to Exploit Freely Natural Wealth and Resources. Available at [http://daccess-ods.un.org/access.nsf/Get?OpenAgent&DS=A/RES/626\(VII\)&Lang=E&Area=RESOLUTION](http://daccess-ods.un.org/access.nsf/Get?OpenAgent&DS=A/RES/626(VII)&Lang=E&Area=RESOLUTION); UN General Assembly Resolution A/Res/1803(XVII), of December 14, 1962, on Permanent Sovereignty over Natural Resources. Available at [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/1803\(XVII\)](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/1803(XVII)); UN General Assembly Resolution A/Res/S-6/3201, of May 1, 1974, on the Declaration on the Establishment of a New International Economic Order. Available at [http://legal.un.org/avl/pdf/ha/ga\\_3201/ga\\_3201\\_ph\\_e.pdf](http://legal.un.org/avl/pdf/ha/ga_3201/ga_3201_ph_e.pdf); UN General Assembly Resolution A/Res/3281(XXIX), of December 12, 1974, on the Charter of Economic Rights and Duties of States. Available at [http://www.un.org/ga/search/view\\_doc.asp?symbol=a/res/3281\(XXIX\)](http://www.un.org/ga/search/view_doc.asp?symbol=a/res/3281(XXIX)).
10. Charter of Economic Rights and Duties of States, *ibid*, Article 2.1.
11. International Covenant on Civil and Political Rights, December 16, 1966, in force March 23, 1976, available at <http://www.ohchr.org/Documents/ProfessionalInterest/ccpr.pdf>, Article 1.2; International Covenant on Economic, Social and Cultural Rights, December

16, 1966, in force January 3, 1976, available at

<http://www.ohchr.org/Documents/ProfessionalInterest/cescr.pdf>, Article 1.2.

12. *Armed Activities (Democratic Republic of the Congo v. Uganda)*, Judgment, December 19, 2005, *ICJ Reports* 2005, paragraph 244.
13. “Anarchic” here does not mean without rules but instead without centralized rule making, rule enforcement, and binding dispute resolution.
14. Wiener ([1999](#): 750–755) thus suggests that this entitlement of rights be called “beneficiaries pay.”
15. The Stockholm Convention on Persistent Organic Pollutants, a global agreement, reaffirmed the Rio Declaration’s statement of the principle. Convention on Persistent Organic Pollutants, Stockholm, May 22, 2001, in force May 17, 2004, Available at <http://chm.pops.int/Portals/0/download.aspx?d=UNEP-POPS-COP-CONVTEXT-2009.En.pdf>. Preamble paragraph 17.
16. At states’ request, the International Law Commission explicitly excluded consideration of the polluter pays principle in its development of Draft Guidelines on the Protection of the Atmosphere (International Law Commission [2018](#) Guideline 2.2; see Sand [2017](#): 206–207).
17. Environmental policies that are contrary to the polluter pays principle also continue to occur domestically. For example, subsidies for zero carbon and renewable energy, insulation, or more environmentally friendly equipment are payments to polluters.
18. United Nations Framework Convention on Climate Change, May 9, 1992, in force March 21, 1994, Article 4.2(a). Available at

[https://unfccc.int/files/essential\\_background/background\\_publications\\_htmlpdf/application/pdf/conveng.pdf](https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf); Kyoto Protocol to the United Nations Framework Convention on Climate Change, December 10, 1997, in force February 16, 2005, Articles 3.1, 12. Available at <https://unfccc.int/sites/default/files/kpeng.pdf>.

19. These policies in which the state that pollutes or engages in an otherwise environmentally harmful practice can be particularly problematic by creating perverse incentives to increase the harmful behavior to be eligible for more payments (Wiener [1999](#): 755–757).
20. *Trail Smelter Arbitration (USA vs. Canada)* (1938 and 1941) 3 RIAA 1905.
21. Stockholm Declaration on the Human–Environment, UN Doc. A/CONF.14/48/Rev. 1, June 16, 1972. Available at <http://www.un-documents.net/unchedec.htm>, Principle 21; Rio Declaration on Environment and Development, in *Report of the UN Conference on Environment and Development, Rio de Janeiro, June 3–14, 1992*, UN Doc A/CONF.151/26 (Vol I), August 12, 1992, available at [http://www.unesco.org/education/pdf/RIO\\_E.PDF](http://www.unesco.org/education/pdf/RIO_E.PDF), Principle 2.
22. *Nuclear Weapons*, Advisory Opinion, July 8, 1996, *ICJ Reports* (1996), paragraph 29. See also *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Judgment, April 20, 2010, *ICJ Reports* (2010), p. 14.
23. The additional term “reasonably” is often, but not always, used as well. For brevity, this article uses “equitably” to include “reasonably,” as appropriate. See Castillo-Laborde ([2010](#)).
24. *Territorial Jurisdiction of the International Commission of the River Oder Case*, Judgment, September 10, 1929, *PCIJ Ser. A*, No. 23 (1929), p. 28.

25. International Law Commission ([1994](#)); *Gabčíkovo-Nagymaros Project (Hungary v. Slovakia)*, Judgment, September 25, 1997, *ICJ Reports* (1997), paragraphs 78, 85; UN General Assembly Resolution A/51/229, of May 21, 1997, on the Convention on the Law of the Non-navigational Uses of International Watercourses, Article 5. Available at <http://www.un.org/documents/ga/res/51/ares51-229.htm>. See also International Law Commission ([2008](#)).
26. *Nuclear Weapons*, Advisory Opinion, July 8, 1996, *ICJ Reports* (1996), paragraph 29. See also *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Judgment, April 20, 2010, *ICJ Reports* (2010), p. 14.
27. That it, it would be a Kaldor-Hicks loss.
28. Convention on the Law of Non-Navigational Uses of International Watercourses, May 21, 1997, in force August 17, 2014. Available at [http://legal.un.org/ilc/texts/instruments/english/conventions/8\\_3\\_1997.pdf](http://legal.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf). Although the Convention provides that riparian parties shall “take all appropriate measures to prevent the causing of significant harm to other watercourse States” (Article 7), this passage was particularly controversial (McCaffrey [1998](#)).
29. The court did not consider this claim in any depth. *Nuclear Tests Cases (Australia v. France)*, Interim Measures, June 22, 1973, *ICJ Reports* (1973), paragraph 101.
30. Because perfect interpersonal—in this case, interstate—welfare comparisons are impossible, this can be stated more precisely in Kaldor-Hicks terms: efficient duties of care are those in which the source state’s marginal cost of precaution equals the recipient state’s marginal willingness to pay for the source state to take precaution.

31. But see *Certain Activities (Costa Rica vs. Nicaragua)*, Compensation, February 2, 2018. Available at <http://www.icj-cij.org/files/case-related/150/150-20180202-JUD-01-00-EN.pdf>.
32. United Nations Convention on the Law of the Sea, December 10, 1982, in force November 16, 1994, Articles 133–191. Available at [http://www.un.org/Depts/los/convention\\_agreements/texts/unclos/unclos\\_e.pdf](http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf).
33. Montreal Protocol on Substances That Deplete the Ozone Layer, September 16, 1987, in force January 1, 1989. Available at [https://treaties.un.org/doc/Treaties/1989/01/19890101%2003-25%20AM/Ch\\_XXVII\\_02\\_ap.pdf](https://treaties.un.org/doc/Treaties/1989/01/19890101%2003-25%20AM/Ch_XXVII_02_ap.pdf).
34. Moreover, the Antarctic moratorium agreement was a response to the failure of a previous proposal for an administrative body. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, December 19, 1966, in force October 10, 1967, Art. II. Available at <http://www.unoosa.org/pdf/publications/STSPACE11E.pdf>. Protocol on Environmental Protection to the Antarctic Treaty, October 4, 1991, in force January 14, 1998, Articles 7, 25. Available at [https://www.ats.aq/documents/recatt/Att006\\_e.pdf](https://www.ats.aq/documents/recatt/Att006_e.pdf).

## References

---

Barnes, R. (2009). *Property rights and natural resources*. Oxford: Hart Publishing.

[Google Scholar](#)

Barnes, P., Costanza, R., Hawken, P., Orr, D., Ostrom, E., et al. (2008). Creating an



Earth atmospheric trust. *Science*,319(5864), 724.

<https://doi.org/10.1126/science.319.5864.724b>.

[Article](#) [CAS](#) [Google Scholar](#)

Barrett, S. (1997). The strategy of trade sanctions in international environmental agreements. *Resource and Energy Economics*,19(4), 345–361.

[https://doi.org/10.1016/S0928-7655\(97\)00016-X](https://doi.org/10.1016/S0928-7655(97)00016-X).

[Article](#) [Google Scholar](#)

Barrett, S. (2003). *Environment and statecraft: The strategy of environmental treaty-making*. Oxford: Oxford University Press.

[Book](#) [Google Scholar](#)

Barrett, S., & Stavins, R. (2003). Increasing participation and compliance in international climate change agreements. *International Environmental Agreements*,3(4), 349–376. <https://doi.org/10.1023/b:Inea.0000005767.67689.28>.

[Article](#) [Google Scholar](#)

Baumol, W. J., & Oates, W. E. (1988). *The theory of environmental policy*. Cambridge: Cambridge University Press.

[Book](#) [Google Scholar](#)

Birnie, P. W., Boyle, A., & Redgwell, C. (2009). *International law and the environment*. Oxford: Oxford University Press.

[Google Scholar](#)

Blocher, J., & Gulati, M. (2017). A market for sovereign control. *Duke Law Journal*,66(4), 797–843.

[Google Scholar](#)

Calabresi, G., & Melamed, A. D. (1972). Property rules, liability rules, and inalienability: One view of the cathedral. *Harvard Law Review*,85(6), 1089–1128.

[Article](#) [Google Scholar](#)

Coase, R. H. (1960). The problem of social cost. *Journal of Law and Economics*,3, 1–44.

[Article](#) [Google Scholar](#)

Cole, D. H. (2011). Property creation by regulation: Rights to clean air and rights to pollute. In D. H. Cole & E. Ostrom (Eds.), *Property in land and other resources* (pp. 125–154). Cambridge, MA: Lincoln Institute of Land Policy.

[Google Scholar](#)

Cooley, A. (2000). Imperial wreckage: Property rights, sovereignty, and security in the post-Soviet space. *International Security*,25(3), 100–127.

<https://doi.org/10.1162/016228800560534>.

[Article](#) [Google Scholar](#)

Cooter, R. (1982). The cost of Coase. *The Journal of Legal Studies*,11(1), 1–33.

[Article](#) [Google Scholar](#)

Cooter, R. B., & Ulen, T. (2011). *Law and economics* (6th ed.). Boston: Addison-Wesley.

[Google Scholar](#)

Crawford, J. (2012). *Brownlie's principles of public international law* (8th ed.). Oxford: Oxford University Press.

[Book](#) [Google Scholar](#)

d'Arge, R. C., & Kneese, A. V. (1980). State liability for international environmental degradation: An economic perspective. *Natural Resources Journal*,20(3), 427-450.

[Google Scholar](#)

Davidson, M. D. (2012). Distributive justice in the international regulation of global ecosystem services. *Global Environmental Change*,22(4), 852-861.  
<https://doi.org/10.1016/j.gloenvcha.2012.06.004>.

[Article](#) [Google Scholar](#)

De Mot, J., Fon, V., & Parisi, F. (2017). Customary international law. In F. Parisi (Ed.), *Production of legal rules (Encyclopedia of law and economics)* (2nd ed., pp. 293-308). Cheltenham: Edward Elgar.  
<https://doi.org/10.4337/9781782540519.00025>.

[Chapter](#) [Google Scholar](#)

de Sadeleer, N. (2002). *Environmental principles: From political slogans to legal rules*. Oxford: Oxford University Press.

[Book](#) [Google Scholar](#)

del Castillo-Laborde, L. (2010). Equitable utilization of shared resources. In R. Wolfrum (Ed.), *The Max Planck encyclopedia of public international law* (2nd ed.). Oxford: Oxford University Press.

[Google Scholar](#)

Dellapenna, J. W. (2001). The customary international law of transboundary fresh waters. *International Journal of Global Environmental Issues*,1(3-4), 264-305.  
<https://doi.org/10.1504/IJGENVI.2001.000981>.

[Article](#) [Google Scholar](#)

Dieperink, C. (2011). International water negotiations under asymmetry, lessons from the Rhine chlorides dispute settlement (1931-2004). *International Environmental Agreements: Politics, Law and Economics*,11(2), 139-157. <https://doi.org/10.1007/s10784-010-9129-3>.

[Article](#) [Google Scholar](#)

Guzman, A. T. (2008). *How international law works: A rational choice theory*. Oxford: Oxford University Press.

[Book](#) [Google Scholar](#)

Henry, L. A., & McIntosh Sundstrom, L. (2007). Russia and the Kyoto Protocol: Seeking an alignment of interests and image. *Global Environmental Politics*,7(4), 47-69. <https://doi.org/10.1162/glep.2007.7.4.47>.

[Article](#) [Google Scholar](#)

Holland, T. E. (1924). *The elements of jurisprudence* (Thirteenth ed.). Oxford: Clarendon Press.

[Google Scholar](#)

International Law Association. (2004). Berlin rules on water resources. In A. H. A. Soons & C. Ward (Eds.), *International Law Association, report of the seventy-first conference, Berlin, 2004* (pp. 334-480). London: International Law Association.

[Google Scholar](#)

International Law Commission. (1994). Draft articles on the law of the non-navigational uses of international watercourses and commentaries thereto and resolution on transboundary confined groundwater. In *Report of the International Law Commission on the work of its 46th session, UN Doc A/49/10* (pp. 89 -135). New York: United Nations.

International Law Commission. (2001a). Draft articles on prevention of transboundary harm from hazardous activities. In *Report of the International Law Commission on the work of its fifty-third session, UN Doc A/56/10* (pp. 146–170). New York: United Nations.

International Law Commission. (2001b). Draft articles on responsibility of states for internationally wrongful acts. In *Report of the International Law Commission on the work of its fifty-third session, UN Doc A/56/10* (pp. 26–143). New York: United Nations.

International Law Commission. (2008). Draft articles on the law of transboundary aquifers. In *Report of the International Law Commission, sixtieth session, UN Doc A/63/10* (pp. 19–79). New York: United Nations.

International Law Commission. (2018). Text of the draft guidelines on the protection of the atmosphere, together with preamble, adopted by the Commission on first reading. In *Report of the International Law Commission, seventieth session, UN Doc A/73/10* (pp. 158–200). New York: United Nations.

Knicley, J. E. (2012). Debt, nature, and indigenous rights: Twenty-five years of debt-for-nature evolution. *Harvard Environmental Law Review*, 36(1), 79–122.

[Google Scholar](#)

Lauterpacht, H. (1927). *Private law sources and analogies of international law: With special reference to international arbitration*. London: Longmans, Green, and Co.

[Google Scholar](#)

Livermore, M. A., & Revesz, R. L. (2014). Environmental law and economics. In F. Parisi (Ed.), *The Oxford handbook of law and economics (Private and commercial*

law) (Vol. 2, pp. 509-542). Oxford: Oxford University Press.

<https://doi.org/10.1093/oxfordhb/9780199684205.013.43>.

[Chapter](#) [Google Scholar](#)

Mabey, N., Hall, S., Smith, C., & Gupta, S. (1997). *Argument in the greenhouse: The international economics of controlling global warming*. London: Routledge.

[Google Scholar](#)

Mamlyuk, B. N. (2009). Analyzing the polluter pays principle through law and economics. *Southeastern Environmental Law Journal*, 18(1), 39-79.

[Google Scholar](#)

McCaffrey, S. (1998). The UN convention on the law of the non-navigational uses of international watercourses: Prospects and pitfalls. World Bank Technical Paper (pp. 17-28).

Posner, R. A. (1984). Wealth maximization and judicial decision-making. *International Review of Law and Economics*, 4(2), 131-135.

[https://doi.org/10.1016/0144-8188\(84\)90002-4](https://doi.org/10.1016/0144-8188(84)90002-4).

[Article](#) [Google Scholar](#)

Posner, E. A., & Sykes, A. O. (2013). *Economic foundations of international law*. Cambridge, MA: Belknap.

[Google Scholar](#)

Reynolds, J. L. (2019). *The governance of solar geoengineering: Managing climate change in the Anthropocene*. Cambridge: Cambridge University Press.

[Book](#) [Google Scholar](#)

Salman, S. M. A. (2007). The Helsinki rules, the UN Watercourses Convention and the Berlin rules: Perspectives on international water law. *Water Resources Development*,23(4), 625-640. <https://doi.org/10.1080/07900620701488562>.

[Article](#) [Google Scholar](#)

Sand, P. H. (2017). The discourse on 'protection of the atmosphere' in the International Law Commission. *Review of European, Comparative & International Environmental Law*,26(3), 201-209. <https://doi.org/10.1111/reel.12212>.

[Article](#) [Google Scholar](#)

Sands, P., & Peel, J. (2012). *Principles of international environmental law* (3rd edn.). Cambridge: Cambridge University Press.

[Book](#) [Google Scholar](#)

Scott, R. E., & Stephan, P. B. (2006). *The limits of leviathan: Contract theory and the enforcement of international law*. Cambridge: Cambridge University Press.

[Book](#) [Google Scholar](#)

Shavell, S. (1984). Liability for harm versus regulation of safety. *Journal of Legal Studies*,13(2), 357-374.

[Article](#) [Google Scholar](#)

Sprankling, J. G. (2011). The emergence of international property law. *North Carolina Law Review*,90(2), 461-509.

[Google Scholar](#)

Trachtman, J. P. (2008). *The economic structure of international law*. Cambridge, MA: Harvard University Press.

[Book](#) [Google Scholar](#)

Wiener, J. B. (1999). Global environmental regulation: Instrument choice in legal context. *Yale Law Journal*, 108(4), 677–800.

[Article](#) [Google Scholar](#)

## Acknowledgements

---

The author thanks the attendees of the Ius Commune Conference, November 23–24, 2017, Utrecht, The Netherlands and the participants of the Tenth Annual Meeting of the Society for Environmental Law and Economics, June 15–16, 2018, Chicago, Illinois, USA, for their feedback, and especially Dan Cole, Jonathan Wiener, and Yael Lifshitz for their specific comments at the latter. He is also grateful for the comments of two anonymous reviewers. The author sincerely thanks the Open Philanthropy Project for its support of his work.

## Author information

---

### Authors and Affiliations

**Emmett Institute on Climate Change and the Environment, School of Law,  
University of California, Los Angeles, 385 Charles E. Young Drive East,  
1242 Law Building, Los Angeles, CA, 90095, USA**

Jesse L. Reynolds

### Corresponding author

Correspondence to [Jesse L. Reynolds](#).

## Additional information

---

### Publisher's Note



Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

## Rights and permissions

---

[Reprints and permissions](#)

## About this article

---

### Cite this article

Reynolds, J.L. An economic analysis of international environmental rights. *Int Environ Agreements* **19**, 557–575 (2019). <https://doi.org/10.1007/s10784-019-09454-7>

Accepted

10 October 2019

Published

19 October 2019

Issue Date

December 2019

DOI

<https://doi.org/10.1007/s10784-019-09454-7>

### Keywords

[Law and economics](#)

[Property rights](#)

[International environmental law](#)

[Polluter pays](#)

[Transboundary harm](#)

## Search

Search by keyword or author



## Navigation

**Find a journal**

---

**Publish with us**

---

**Track your research**

---

