

IIASA's work is underpinned by high-quality science, which is regularly published in high-impact publications. A selection of articles published since 2012 in *Nature*, *Nature Climate Change*, *Nature Geoscience*, *Science*, *Proceedings of the National Academy of Sciences of the United States of America (PNAS)*, and *Philosophical Transactions of and Proceedings of the Royal Society B* is presented here. Publication statistics are also included to show how much IIASA publishes and how this has increased in recent years.



Nature

Limited impact on decadal-scale climate change from increased use of natural gas

McJeon H, Edmonds N, Bauer N, Clarke L, Fisher B, Flannery BP, Hilaire J, Krey V, Marangoni G, Mi R, Riahi K, Rogner H-H, Tavoni M
Nature 514(7523):482–485 (2014)

Climate extremes and the carbon cycle

Reichstein M, Bahn M, Ciais P, Frank D, Mahecha MD, Seneviratne SI, Zscheischler J, Beer C, Buchmann N, Frank DC, Papale D, Rammig A, Smith P, Thonicke K, van der Velde M, Vicca S, Walz A, Wattenbach M
Nature 500(7462):287–295 (2013)

Earth science: A holistic approach to climate targets

Rogelj J
Nature 499(7457):160–161 (2013)

Probabilistic cost estimates for climate change mitigation

Rogelj J, McCollum DL, Reisinger A, Meinshausen M, Riahi K
Nature 493(7430):79–83 (2013)

Sexual selection enables long-term coexistence despite ecological equivalence

M'Gonigle LK, Mazzucco R, Otto SP, Dieckmann U
Nature 484(7395):506–509 (2012)

Agriculture: Soil remedies for small-scale farming

van der Velde M, See L, Fritz S
Nature 484(7394):318 (2012)

Conservation: Citizens add to satellite forest maps

van der Velde M, See L, Fritz S
Nature 490(7420):342 (2012)



Nature Climate Change

Nutrient availability as the key regulator of global forest carbon balance

Fernández-Martínez M, Vicca S, Janssens IA, Obersteiner M, et al.
Nature Climate Change 4(6):471–476 (2014)

Betting on negative emissions

Fuss S, Canadell JG, Peters GP, Tavoni M, Andrew RM, Ciais P, Jackson RB, Jones CD, Kraxner F, Nakicenovic N, Le Quéré C, Raupach MR, Sharifi A, Smith P, Yamagata Y
Nature Climate Change 4(10):850–853 (2014)

Water–energy nexus: Assessing integrated systems

Howells M, Rogner H-H
Nature Climate Change 4(4):246–247 (2014)

Increasing stress on disaster-risk finance due to large floods

Jongman B, Hochrainer-Stigler S, Feyen L, Mechler R, Pflug GC, et al.
Nature Climate Change 4(4):264–268 (2014)

Reply to 'Statistics of flood risk'

Jongman B, Hochrainer-Stigler S, Feyen L, Aerts JCJH, Mechler R, Botzen WJW, Bouwer LM, Pflug GC, Rojas R, Ward PJ
Nature Climate Change 4(10):844–845 (2014)

Managing unnatural disaster risk from climate extremes

Mechler R, Bouwer LM, Linnerooth-Bayer J, Hochrainer-Stigler S, Aerts JCJH, Surminski S, Williges K
Nature Climate Change 4(4):235–237 (2014)

Potential for concentrating solar power to provide baseload and dispatchable power

Pfenninger S, Gauché P, Lilliestam J, Damerau K, Wagner F, Patt A
Nature Climate Change (published online 22 June 2014)

Climate impacts of poverty eradication

Rao ND, Riahi K, Grubler A
Nature Climate Change 4(9):749–751 (2014)

Air-pollution emission ranges consistent with the representative concentration pathways

Rogelj J, Rao S, McCollum DL, Pachauri S, Klimont Z, Krey V, Riahi K
Nature Climate Change 4(6):446–450 (2014)

Questions of bias in climate models

Smith SJ, Wigley TML, Meinshausen M, Rogelj J
Nature Climate Change 4(9):741–742 (2014)

Integrated analysis of climate change, land-use, energy and water strategies

Howells M, Hermann S, Welsch M, Bazilian M, Segerström R, Alfstad T, Gielen D, Rogner H-H, Fischer G, van Velthuizen H, Wiberg D, et al.
Nature Climate Change 3(7):621–626 (2013)

Water at a crossroads (Interview)

Kabat P
Nature Climate Change 3(1):11–12 (2013)

2020 emissions levels required to limit warming to below 2°C

Rogelj J, McCollum DL, O'Neill BC, Riahi K
Nature Climate Change 3(4):405–412 (2013)

The UN's 'Sustainable Energy for All' initiative is compatible with a warming limit of 2°C

Rogelj J, McCollum DL, Riahi K
Nature Climate Change 3(6):545–551 (2013)

Beyond vulnerability assessment

Swart R, Fuss S, Obersteiner M, Ruti P, Teichmann C, Vautard R
Nature Climate Change 3(11):942–943 (2013)

Impacts of incentives to reduce emissions from deforestation on global species extinctions

Strassburg BBN, Rodrigues ASL, Gusti M, Balmford A, Fritz S, Obersteiner M, Turner RK, Brooks TM
Nature Climate Change 2(5):350–355 (2012)

Vulnerability of US and European electricity supply to climate change

van Vliet MTH, Yearsley JR, Ludwig F, Vögele S, Lettenmaier DP, Kabat P
Nature Climate Change 2(9):676–681 (2012)

Marginalization of end-use technologies in energy innovation for climate protection

Wilson C, Grubler A, Gallagher KS, Nemet GF
Nature Climate Change 2(11):780–788 (2012)



Nature Geoscience

Persistent growth of CO₂ emissions and implications for reaching climate targets

Friedlingstein P, Andrew RM, Rogelj J, Peters GP, Canadell JG, Knutti R, Luderer G, Raupach MR, Schaeffer M, van Vuuren DP, Le Quéré C
Nature Geoscience 7(10):709–715 (2014)

The phosphorus trilemma

Obersteiner M, Peñuelas J, Ciais P, van der Velde M, Janssens IA
Nature Geoscience 6(11):897–898 (2013)

Warming-induced increase in aerosol number concentration likely to moderate climate change

Paasonen P, Asmi A, Petäjä T, Kajos MK, Junninen H, Holst T, et al.
Nature Geoscience 6(6):438–442 (2013)

Science

Population growth: Peak probability

Lutz W, Butz W, KC S, Scherbov S
Science 346(6209):561 (2014)

Universal education is key to enhanced climate adaptation

Lutz W, Muttarak R, Striessnig E
Science 346(6213):1061–1062 (2014)

Reconsidering the consequences of selective fisheries

Garcia SM, Kolding J, Rice J, Dunn D, Fulton EA, Hall M, Heino M, Law R, Makino M, Rijnsdorp AD, Simard F, Smith ADM, et al.
Science 335(6072):1045–1047 (2012)

Systems science for policy evaluation

Kabat P
Science 336(6087):1398 (2012)

Demography's role in sustainable development

Lutz W, Butz WP, Castro M, Dasgupta P, Jiang L, Mishra V, Montgomery MR, Riahi K, Scherbov S, Peng X, Yeoh B, et al.
Science 335(6071):918 (2012)

From acid rain to climate change

Reis S, Grennfelt P, Klimont Z, Amann M, ApSimon H, Hettelingh J-P, Holland M, LeGall A-C, Maas R, Posch M, Spranger T, Sutton MA, Williams M
Science 338(6111):1153–1154 (2012)

Simultaneously mitigating near-term climate change and improving human health and food security

Shindell D, Kuylenstierna JCI, Vignati E, van Dingenen R, Amann M, Klimont Z, Kupiainen K, Höglund-Isaksson L, et al.
Science 335(6065):183–189 (2012)



Proceedings of the National Academy of Sciences of the United States of America (PNAS)

Cattle ranching intensification in Brazil can reduce global greenhouse gas emissions by sparing land from deforestation

Cohn AS, Mosnier A, Havlík P, Valin H, Herrero M, Schmid E, O'Hare M, Obersteiner M
PNAS 111(20):7236–7241 (2014)

Constraints and potentials of future irrigation water availability on agricultural production under climate change

Elliott J, Deryng D, Müller C, Folberth C, Frieler K, Khabarov N, Rosenzweig C, Ruane AC, Satoh Y, Tang Q, Wisser D, et al.
PNAS 111(9):3239–3244 (2014)

Dealing with femtorisks in international relations

Frank AB, Goud Collins M, Levin SA, Lo AW, Ramo J, Dieckmann U, Kremenyuk V, Kryazhimskiy A, Linnerooth-Bayer J, Ramalingam B, Roy JS, Saari DG, Thurner S, von Winterfeldt D
PNAS (Published online 17 November 2014)

Fast running restricts evolutionary change of the vertebral column in mammals

Galis F, Carrier DR, van Alphen J, van der Mije SD, Van Dooren TJM, Metz JAJ, ten Broek CMA
PNAS 111(31):11401–11406 (2014)

How multiplicity determines entropy and the derivation of the maximum entropy principle for complex systems

Hanel R, Thurner S, Gell-Mann M
PNAS 111(19):6905–6910 (2014)

Climate change mitigation through livestock system transitions

Havlík P, Valin H, Herrero M, Obersteiner M, Schmid E, Rufino MC, Mosnier A, Thornton PK, Böttcher H, Conant RT, Frank S, Fritz S, Fuss S, Kraxner F, Notenbaert A
PNAS 111(10):3709–3714 (2014)

Climate change effects on agriculture: Economic responses to biophysical shocks

Nelson GC, Valin H, Sands RD, Havlík P, Ahammad H, Deryng D, et al.
PNAS 111(9):3274–3279 (2014)

Multisectoral climate impact hotspots in a warming world

Piontek F, Müller C, Pugh TAM, Clark DB, Deryng D, Khabarov N, et al.
PNAS 111(9):3233–3238 (2014)

Disentangling the effects of CO₂ and short-lived climate forcer mitigation

Rogelj J, Schaeffer M, Meinshausen M, Shindell DT, Hare W, Klimont Z, Velders GJM, Amann M, Schellnhuber HJ
PNAS 111(46):16325–16330 (2014)

Assessing agricultural risks of climate change in the 21st century in a global gridded crop model intercomparison

Rosenzweig C, Elliott J, Deryng D, Ruane AC, Khabarov N, et al.
PNAS 111(9):3268–3273 (2014)

Global Climate Impacts: A Cross-Sector, Multi-Model Assessment Special Feature

Schellnhuber HJ, Frieler K, Kabat P (Eds)
PNAS 111(9):3225–3297 (2014)

The elephant, the blind, and the intersectoral intercomparison of climate impacts

Schellnhuber HJ, Frieler K, Kabat P
PNAS 111(9):3225–3227 (2014)

Multimodel assessment of water scarcity under climate change

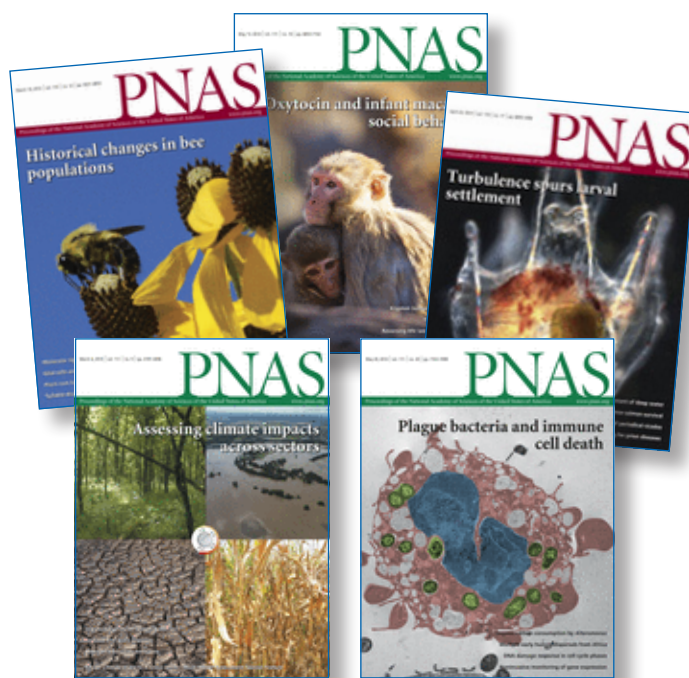
Schewe J, Heinke J, Gerten D, Haddeland I, Kabat P, et al.
PNAS 111(9):3245–3250 (2014)

The changing face of cognitive gender differences in Europe

Weber D, Skirbekk V, Freund I, Herlitz A
PNAS 111(32):11673–11678 (2014)

Energy systems transformation

Dangerman ATCJ, Schellnhuber HJ
PNAS 110(7):E549–E558 (2013)

**Economic repercussions of fisheries-induced evolution**

Eikeset AM, Richter A, Dunlop ES, Dieckmann U, Stenseth NC
PNAS 110(30):12259–12264 (2013)

Outsourcing CO₂ within China

Feng K, Davis SJ, Sun L, Li X, Guan D, Liu W, Liu Z, Hubacek K
PNAS 110(28):11654–11659 (2013)

Biomass use, production, feed efficiencies, and greenhouse gas emissions from global livestock systems

Herrero M, Havlík P, Valin H, Notenbaert A, Obersteiner M, et al.
PNAS 110(52):20888–20893 (2013)

Evolution of extortion in Iterated Prisoner's Dilemma games

Hilbe C, Nowak MA, Sigmund K
PNAS 110(17):6913–6918 (2013)

Quantification of excess risk for diabetes for those born in times of hunger, in an entire population of a nation, across a century

Thurner S, Klimek P, Szell M, Duftschnid G, Endel G, Kautsky-Willer A, Kasper DC
PNAS 110(12):4703–4707 (2013)

Reply to Klitz and Niklasson: Can viral infections explain the cross-sectional Austrian diabetes data?

Thurner S, Klimek P, Szell M, Duftschnid G, Endel G, Kautsky-Willer A, Kasper DC
PNAS 110(30):E2751 (2013)

Statistical detection of systematic election irregularities

Klimek P, Yegorov Y, Hanel R, Thurner S
PNAS 109(41):16469–16473 (2012)

The take-it-or-leave-it option allows small penalties to overcome social dilemmas

Sasaki T, Brännström A, Dieckmann U, Sigmund K
PNAS 109(4):1165–1169 (2012)

Variation in cognitive functioning as a refined approach to comparing aging across countries

Skirbekk V, Loichinger E, Weber D
PNAS 109(3):770–774 (2012)

Philosophical Transactions of and Proceedings of the Royal Society B

The global nitrogen cycle in the twenty-first century

Fowler D, Coyle M, Skiba U, Sutton MA, Cape JN, Reis S, Sheppard LJ, Jenkins A, Grizzetti B, Galloway JN, Vitousek P, Leach A, Bouwman AF, Butterbach-Bahl K, Dentener F, Stevenson D, Amann M, Voss M
Philosophical Transactions of the Royal Society B: Biological Sciences 368(1621):20130164 (2013)

The evolution of cooperation by social exclusion

Sasaki T, Uchida S
Proceedings of the Royal Society B: Biological Sciences 280(1752):20122498 (2013)

Egg size-dependent expression of growth hormone receptor accompanies compensatory growth in fish

Segers FHID, Berishvili G, Taborsky B
Proceedings of the Royal Society B: Biological Sciences 279(1728):592–600 (2012)

Juvenile exposure to predator cues induces a larger egg size in fish

Segers FHID, Taborsky B
Proceedings of the Royal Society B: Biological Sciences 279(1731):1241–1248 (2012)



The role of N₂O derived from crop-based biofuels, and from agriculture in general, in Earth's climate

Smith KA, Mosier AR, Crutzen PJ, Winiwarter W
Philosophical Transactions of the Royal Society B: Biological Sciences 367(1593):1169–1174 (2012)

Publication Statistics

The number of journal articles authored by IIASA researchers and the citations of these articles has increased significantly since 2002 as shown in the chart (right) based on data through May 2014.

This trend is continuing in 2014: at the end of October there were 205 peer-reviewed journal articles by IIASA authors and 7,514 citations of journal articles by IIASA authors. As a comparison, the respective numbers for the complete year 2013 were 254 journal articles and 8867 citations.

The **h-index** measures the productivity and impact of journal articles published by an author or institute. IIASA's h-index is 93, meaning that of all IIASA journal articles, 93 articles have been cited more than 93 times.

Source: Statistics from Scopus database of peer-reviewed literature; chart from IIASA Annual Report 2013

