

## Climate change affects multiple dimensions of well-being through impacts, information and policy responses

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### Abstract

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The consequences of climate change and responses to climate change interact with multiple dimensions of human well-being in ways that are emerging or invisible to decision makers. We examine how elements of well-being—health, safety, place, self and belonging—are at risk from climate change. We propose that the material impacts of a changing climate, discourses and information on future and present climate risks, and policy responses to climate change affect all these elements of well-being. We review evidence on the scale and scope of these climate change consequences for well-being and propose policy and research priorities that are oriented towards supporting well-being through a changing climate.

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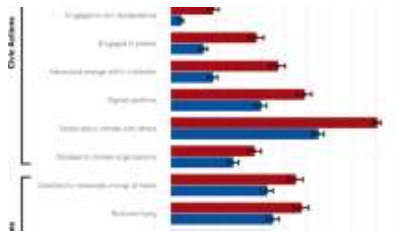
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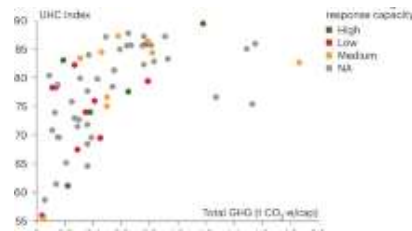
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## **References**

1. Crate, S. A. & Nuttall, M. (eds) *Anthropology and Climate Change: From Encounters to Actions* (Routledge, 2016).
2. Brace, C. & Geoghegan, H. Human geographies of climate change: landscape, temporality, and lay knowledges. *Prog. Hum. Geogr.* **35**, 284–302 (2011).
3. Nelson, G. et al. Income growth and climate change effects on global nutrition security to mid-century. *Nat. Sustain.* **1**, 773–781 (2018).
4. Ebi, K. L. et al. Hot weather and heat extremes: health risks. *Lancet* **398**, 698–708 (2021).
5. Hertel, T. W. Food security under climate change. *Nat. Clim. Change* **6**, 10–13 (2016).

6. Bedran-Martins, A. M., Lemos, M. C. & Philippi, A. Relationship between subjective well-being and material quality of life in face of climate vulnerability in NE Brazil. *Climatic Change* **147**, 283–297 (2018).

---

7. Huppert, F. A. Psychological well-being: evidence regarding its causes and consequences. *Appl. Psychol. Health Well Being* **1**, 137–164 (2009).

---

8. Adler, A. & Seligman, M. E. P. Using well-being for public policy: theory, measurement, and recommendations. *Int. J. Well Being* **6**, 1–35 (2016).

---

9. Lee, M. T., Kubzansky, L. D. & VanderWeele, T. J. (eds) *Measuring Well-Being: Interdisciplinary Perspectives from the Social Sciences and the Humanities* (Oxford Univ. Press, 2021).

---

10. Diener, E., Oishi, S. & Lucas, R. E. Personality, culture, and subjective well-being: emotional and cognitive evaluations of life. *Annu. Rev. Psychol.* **54**, 403–425 (2003).

---

11. Millennium Ecosystem Assessment *Ecosystems and Human Well-Being: Synthesis* (Island Press, 2005).

---

12. Lapointe, M., Gurney, G. G., Coulthard, S. & Cumming, G. S. Ecosystem services, well-being benefits and urbanization associations in a Small Island Developing State. *People Nat.* **3**, 391–404 (2021).

---

13. Haslam, S. A., Jetten, J., Postmes, T. & Haslam, C. Social identity, health, and well-being: an emerging agenda for applied psychology. *Appl. Psychol.* **58**, 1–23 (2009).

---

14. Walker-Springett, K., Butler, C. & Adger, W. N. Wellbeing in the aftermath of floods. *Health Place* **43**, 66–74 (2017).

---

15. Maslow, A. H. A theory of human motivation. *Psychol. Rev.* **50**, 370 (1943).

---

16. Tay, L. & Diener, E. Needs and subjective well-being around the world. *J. Pers. Soc. Psychol.* **101**, 354 (2011).

---

17. Ryan, R. M. & Deci, E. L. Intrinsic and extrinsic motivations: classic definitions and new directions. *Contemp. Educ. Psychol.* **25**, 54–67 (2000).

---

18. Ryan, R. M. & Deci, E. L. *Self-Determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness* (Guilford, 2017).

---

19. Gough, I. Climate change and sustainable welfare: the centrality of human needs. *Camb. J. Econ.* **39**, 1191–1214 (2015).

---

20. Lamb, W. F. & Steinberger, J. K. Human well-being and climate change mitigation. *WIREs Clim. Change* **8**, e485 (2017).

---

21. Giddens, A. *Politics of Climate Change* (Polity, 2009).

---

22. Graham, S. et al. The social values at risk from sea-level rise. *Environ. Impact Assess. Rev.* **41**, 45–52 (2013).

---

23. Clayton, S. et al. Psychological research and global climate change. *Nat. Clim. Change* **5**, 640–646 (2015).
- 
24. Clayton, S. & Manning, C. (eds) *Psychology and Climate Change: Human Perceptions, Impacts, and Responses* (Academic Press, 2018).
- 
25. Tajfel, H. & Turner, J. C. The social identity theory of intergroup behaviour. *Psychol. Intergroup Relat.* **2**, 7–24 (1986).
- 
26. Turner, J. C. in *Social Identity and Intergroup Relations* (ed. Tajfel, H.) 15–40 (Cambridge Univ. Press, 1982).
- 
27. Nelson, S. K., Fuller, J. A. K., Choi, I. & Lyubomirsky, S. Beyond self-protection: self-affirmation benefits hedonic and eudaimonic well-being. *Pers. Soc. Psychol. Bull.* **40**, 998–1011 (2014).
- 
28. Betts, R. A., Haward, A. B. & Pearson, K. V. (eds) *The Third UK Climate Change Risk Assessment Technical Report* <https://www.ukclimaterisk.org/independent-assessment-ccra3/technical-report/> (Climate Change Committee, 2021).
- 
29. Barnett, J. Political economies of vulnerability to climate change. *Prog. Hum. Geogr.* **44**, 1172–1184 (2020).
- 
30. Romanello, M. et al. The 2021 report of the Lancet Countdown on health and climate change: code red for a healthy future. *Lancet* **398**, 1619–1662 (2021).
-

31. Kessler, R. C., Galea, S., Jones, R. T. & Parker, H. A. Mental illness and suicidality after Hurricane Katrina. *Bull. World Health Organ.* **84**, 930–939 (2006).
- 
32. Frame, D.J. et al. Climate change attribution and the economic costs of extreme weather events: a study on damages from extreme rainfall and drought. *Climatic Change* **162**, 781–797 (2020).
- 
33. Hallegatte, S., Green, C., Nicholls, R.J. & Corfee-Morlot, J. Future flood losses in major coastal cities. *Nat. Clim. Change* **3**, 802–806 (2013).
- 
34. Hallegatte, S. & Rozenberg, J. Climate change through a poverty lens. *Nat. Clim. Change* **7**, 250–256 (2017).
- 
35. Durkalec, A., Furgal, C., Skinner, M. W. & Sheldon, T. Climate change influences on environment as a determinant of Indigenous health: relationships to place, sea ice, and health in an Inuit community. *Soc. Sci. Med.* **136**, 17–26 (2015).
- 
36. Cissé, G. et al. in *Climate Change 2022: Impacts, Adaptation and Vulnerability* (eds Pörtner, H.-O. et al.) Ch. 7 (IPCC, Cambridge Univ. Press, 2022).
- 
37. Singh, C., Rahman, A., Srinivas, A. & Bazaz, A. Risks and responses in rural India: implications for local climate change adaptation action. *Clim. Risk Manage.* **21**, 52–68 (2018).
- 
38. Gutierrez, H. et al. Perceptions of local vulnerability and the relative importance of climate change in rural Ecuador. *Hum. Ecol.* **48**, 383–395 (2020).
-

39. Mitra, A. Migration, livelihood and well-being: evidence from Indian city slums. *Urban Stud.* **47**, 1371–1390 (2021).
- 
40. Busby, J. W., Raleigh, C. & Salehyan, I. in *Peace and Conflict 2014* (eds Huth, P. K. et al.) Ch. 7 (Paradigm, 2013).
- 
41. Pearson, D. & Newman, P. Climate security and a vulnerability model for conflict prevention: a systematic literature review focusing on African agriculture. *Sustain. Earth* **2**, 2 (2019).
- 
42. Buhaug, H. et al. One effect to rule them all? A comment on climate and conflict. *Climatic Change* **127**, 391–397 (2014).
- 
43. Albert, S. et al. Interactions between sea-level rise and wave exposure on reef island dynamics in the Solomon Islands. *Environ. Res. Lett.* **11**, 054011 (2016).
- 
44. Edwards, M. J. Security implications of a worst-case scenario of climate change in the south-west Pacific. *Aust. Geogr.* **30**, 311–330 (1999).
- 
45. Fresque-Baxter, J. A. & Armitage, D. Place identity and climate change adaptation: a synthesis and framework for understanding. *WIREs Clim. Change* **3**, 251–266 (2012).
- 
46. McMichael, C., Farbotko, C., Piggott-McKellar, A., Powell, T. & Kitara, M. Rising seas, immobilities, and translocality in small island states: case studies from Fiji and Tuvalu. *Popul. Environ.* **43**, 82–107 (2021).
-



47. Cunsolo, A. et al. Ecological grief and anxiety: the start of a healthy response to climate change? *Lancet Planet. Health* **4**, e261–e263 (2020).
- 
48. Tseng, T.-W.J. et al. Influence of land tenure interventions on human well-being and environmental outcomes. *Nat. Sustain.* **4**, 242–251 (2021).
- 
49. Cunsolo Willox, A. et al. The land enriches the soul: on climatic and environmental change, affect, and emotional health and well-being in Rigolet, Nunatsiavut, Canada. *Emot. Space Soc.* **6**, 14–24 (2013).
- 
50. Hess, J.J., Malilay, J. N. & Parkinson, A.J. Climate change: the importance of place. *Am.J. Prev. Med.* **35**, 468–478 (2008).
- 
51. Adger, W. N. Place, well-being, and fairness shape priorities for adaptation to climate change. *Glob. Environ. Change* **38**, A1–A3 (2016).
- 
52. Guardiola, J. & García-Quero, F. Buen vivir (living well) in Ecuador: community and environmental satisfaction without household material prosperity? *Ecol. Econ.* **107**, 177–184 (2014).
- 
53. Furgal, C. & Seguin, J. Climate change, health and vulnerability in Canadian northern Aboriginal communities. *Environ. Health Perspect.* **114**, 1964–1970 (2006).
- 
54. Johnson, D., Parsons, M. & Fisher, K. Engaging Indigenous perspectives on health, wellbeing and climate change: a new research agenda for holistic climate action in Aotearoa and beyond. *Local Environ.* **26**, 477–503 (2021).
-

55. Tschakert, P., Ellis, N. R., Anderson, C., Kelly, A. & Obeng, J. One thousand ways to experience loss: a systematic analysis of climate-related intangible harm from around the world. *Glob. Environ. Change* **55**, 58–72 (2019).
- 
56. Farbotko, C., Stratford, E. & Lazrus, H. Climate migrants and new identities? The geopolitics of embracing or rejecting mobility. *Soc. Cult. Geogr.* **17**, 533–552 (2016).
- 
57. Fletcher, M. S., Hamilton, R., Dressler, W. & Palmer, L. Indigenous knowledge and the shackles of wilderness. *Proc. Natl Acad. Sci. USA* **118**, e2022218118 (2021).
- 
58. Petheram, L., Stacey, N. & Fleming, A. Future sea changes: Indigenous women's preferences for adaptation to climate change on South Goulburn Island. *North. Territ. (Aust.). Clim. Dev.* **7**, 339–352 (2015).
- 
59. Le Duff, M., Dumas, P., Allenbach, M. & Cohen, O. An orientation for coastal disaster risks management and prevention policy in a global warming context: case study in Ouvea (New Caledonia). *Mar. Policy* **117**, 103393 (2020).
- 
60. Smith, K. R. et al. in *Climate Change 2014: Impacts, Adaptation, and Vulnerability* (eds Field, C. B. et al.) 709–754 (IPCC, Cambridge Univ. Press, 2014).
- 
61. van Valkengoed, A. M. & Steg, L. Meta-analyses of factors motivating climate change adaptation behaviour. *Nat. Clim. Change* **9**, 158–163 (2019).
- 
62. Nitschke, M. et al. Evaluation of a heat warning system in Adelaide, South Australia, using case-series analysis. *BMJ Open* **6**, e012125 (2016).
-

63. Weinberger, K. R., Zanobetti, A., Schwartz, J. & Wellenius, G. A. Effectiveness of National Weather Service heat alerts in preventing mortality in 20 US cities. *Environ. Int.* **116**, 30–38 (2018).
- 
64. Reser, J. P., Bradley, G. L., Glendon, A. I., Ellul, M. C., & Callaghan, R. *Public Risk Perceptions, Understandings, and Responses to Climate Change and Natural Disasters in Australia, 2010 and 2011* (National Climate Change Adaptation Research Facility, 2012).
- 
65. Gibson, K. E., Barnett, J., Haslam, N. & Kaplan, I. The mental health impacts of climate change: findings from a Pacific Island atoll nation. *J. Anxiety Disord.* **73**, 102237 (2020).
- 
66. Leiserowitz, A. et al. *Climate Change in the American Mind: December 2018* (Yale University and George Mason University, 2018).
- 
67. Paprocki, K. All that is solid melts into the bay: anticipatory ruination and climate change adaptation. *Antipode* **51**, 295–315 (2019).
- 
68. Mills-Novoa, M., Boelens, R., Hoogesteger, J. & Vos, J. Governmentalities, hydrosocial territories & recognition politics: the making of objects and subjects for climate change adaptation in Ecuador. *Geoforum* **115**, 90–101 (2020).
- 
69. Ojha, H. R. et al. Policy without politics: technocratic control of climate change adaptation policy making in Nepal. *Clim. Policy* **16**, 415–433 (2016).
-

70. Thomas, K. A. & Warner, B. P. Weaponizing vulnerability to climate change. *Glob. Environ. Change* **57**, 101928 (2019).
- 
71. Boda, C. S. & Jerneck, A. Enabling local adaptation to climate change: towards collective action in Flagler Beach, Florida, USA. *Climatic Change* **157**, 631–649 (2019).
- 
72. Colding, J., Barthel, S., Ljung, R., Eriksson, F. & Sjöberg, S. Urban commons and collective action to address climate change. *Soc. Incl.* **10**, 103–114 (2022).
- 
73. Groulx, M., Lewis, J., Lemieux, C. & Dawson, J. Place-based climate change adaptation: a critical case study of climate change messaging and collective action in Churchill, Manitoba. *Landsc. Urban Plan.* **132**, 136–147 (2014).
- 
74. Wamsler, C. & Bristow, J. At the intersection of mind and climate change: integrating inner dimensions of climate change into policymaking and practice. *Climatic Change* **173**, 7 (2022).
- 
75. McCright, A. M. & Dunlap, R. E. Cool dudes: the denial of climate change among conservative white males in the United States. *Glob. Environ. Change* **21**, 1163–1172 (2011).
- 
76. O'Neill, S. J., Boykoff, M., Niemeyer, S. & Day, S. A. On the use of imagery for climate change engagement. *Glob. Environ. Change* **23**, 413–421 (2013).
- 
77. Muroi, S. K. & Bertone, E. From thoughts to actions: the importance of climate change education in enhancing students' self-efficacy. *Aust. J. Environ. Educ.* **35**, 123–

- 
78. Nelson, S. M., Ira, G. & Merenlender, A. M. Adult climate change education advances learning, self-efficacy, and agency for community-scale stewardship. *Sustainability* **14**, 1804 (2022).
- 
79. Frank, E. et al. Social identity, perception and motivation in adaptation to climate risk in the coffee sector of Chiapas, Mexico. *Glob. Environ. Change* **21**, 66–76 (2011).
- 
80. Barnett, J., Graham, S., Quinn, T., Adger, W. N. & Butler, C. Three ways social identity shapes climate change adaptation. *Environ. Res. Lett.* **16**, 124029 (2021).
- 
81. Quinn, T., Lorenzoni, I. & Adger, W. N. in *The Adaptive Challenge of Climate Change* (eds O'Brien, K. L. & Selboe, E.) 160–170 (Cambridge Univ. Press, 2015).
- 
82. Wernersson, J. Rethinking identity in adaptation research: performativity and livestock keeping practices in the Kenyan drylands. *World Dev.* **108**, 283–295 (2018).
- 
83. Devine-Wright, P., Price, J. & Leviston, Z. My country or my planet? Exploring the influence of multiple place attachments and ideological beliefs upon climate change attitudes and opinions. *Glob. Environ. Change* **30**, 68–79 (2015).
- 
84. Adger, W. N., Butler, C. & Walker-Springett, K. Moral reasoning in adaptation to climate change. *Environ. Polit.* **26**, 371–390 (2017).
-

85. Drahos, P. The regulation of public goods. *J. Int. Econ. Law* **7**, 321–339 (2004).
- 
86. Stern, N. H. *The Economics of Climate Change: The Stern Review* (Cambridge Univ. Press, 2007).
- 
87. Berrang-Ford, L. et al. A systematic global stocktake of evidence on human adaptation to climate change. *Nat. Clim. Change* **11**, 989–1000 (2021).
- 
88. Adger, W. N. & Barnett, J. Four reasons for concern about adaptation to climate change. *Environ. Plan. A* **41**, 2800–2805 (2009).
- 
89. Schipper, E. L. F. Maladaptation: when adaptation to climate change goes very wrong. *One Earth* **3**, 409–414 (2020).
- 
90. Scheelbeek, P. F. et al. The effects on public health of climate change adaptation responses: a systematic review of evidence from low- and middle-income countries. *Environ. Res. Lett.* **16**, 073001 (2021).
- 
91. Harries, T. & Penning-Rowsell, E. Victim pressure, institutional inertia and climate change adaptation: the case of flood risk. *Glob. Environ. Change* **21**, 188–197 (2011).
- 
92. McEwen, L., Garde-Hansen, J., Holmes, A., Jones, O. & Krause, F. Sustainable flood memories, lay knowledges and the development of community resilience to future flood risk. *Trans. Inst. Br. Geogr.* **42**, 14–28 (2017).
-

93. Hino, M., Field, C. B. & Mach, K. J. Managed retreat as a response to natural hazard risk. *Nat. Clim. Change* **7**, 364–370 (2017).
- 
94. Ajibade, I. J. & Siders, A. R. (eds) *Global Views on Climate Relocation and Social Justice* (Routledge, 2022).
- 
95. Piggott-McKellar, A. E., Pearson, J., McNamara, K. E. & Nunn, P. D. A livelihood analysis of resettlement outcomes: lessons for climate-induced relocations. *Ambio* **49**, 1474–1489 (2020).
- 
96. Marino, E. *Fierce Climate, Sacred Ground: An Ethnography of Climate Change in Shishmaref, Alaska* (Univ. of Alaska Press, 2015).
- 
97. Sharifi, A., Pathak, M., Joshi, C. & He, B. J. A systematic review of the health co-benefits of urban climate change adaptation. *Sustain. Cities Soc.* **74**, 103190 (2021).
- 
98. Ura, K., Alkire, S., Zangmo, T. & Wangdi, K. *An Extensive Analysis of the Gross National Happiness Index* (Centre of Bhutan Studies, 2012).
- 
99. Vanuatu National Statistics Office *Alternative Indicators of Wellbeing for Melanesia, Vanuatu Pilot Study Report* (Malvatumauri National Council of Chiefs, 2012).
- 
100. Díaz, S. et al. The IPBES Conceptual Framework—connecting nature and people. *Curr. Opin. Environ. Sustain.* **14**, 1–16 (2015).
-

101. Chaigneau, T. et al. Reconciling well-being and resilience for sustainable development. *Nat. Sustain.* **5**, 287–293 (2022).
- 
102. Schipper, E. L. F. et al. in *Climate Change 2022: Impacts, Adaptation and Vulnerability* (eds Pörtner, H.-O. et al.) Ch. 18 (IPCC, Cambridge Univ. Press, 2022).
- 
103. Zafra-Calvo, N. et al. Plural valuation of nature for equity and sustainability: insights from the Global South. *Glob. Environ. Change* **63**, 102115 (2020).
- 
104. Diener, E. & Seligman, M. E. Beyond money: toward an economy of well-being. *Psychol. Sci. Public Interest* **5**, 1–31 (2004).
- 
105. *Towards a Wellbeing Budget—Examples from Canada and New Zealand*, <https://whatworkswellbeing.org/practice-examples/towards-a-wellbeing-budget-examples-from-canada-and-new-zealand/> (What Works Wellbeing Centre, 2021).
- 
106. *Wellbeing Economy Policy Design Guide*, [https://wellbeingeconomy.org/wp-content/uploads/Wellbeing-Economy-Policy-Design-Guide\\_Mar17\\_FINAL.pdf](https://wellbeingeconomy.org/wp-content/uploads/Wellbeing-Economy-Policy-Design-Guide_Mar17_FINAL.pdf) (Wellbeing Economy Alliance, 2022).
- 
107. *Adaptation Communication—Republic of the Marshall Islands (RMI)*, [https://unfccc.int/sites/default/files/resource/RMI-AdaptationCommunication\\_Dec2020.pdf](https://unfccc.int/sites/default/files/resource/RMI-AdaptationCommunication_Dec2020.pdf) (Climate Change Directorate, 2020).
- 
108. *Approaches to Address Loss and Damage Associated with Climate Change Impacts in Developing Countries*, <https://unfccc.int/topics/adaptation-and-resilience/workstreams/approaches-to-address-loss-and-damage-associated->



[with-climate-change-impacts-in-developing-countries](#) (United Nations Framework Convention on Climate Change, 2022).

---

109. Hickman, C. We need to (find a way to) talk about...eco-anxiety. *J. Soc. Work Pract.* **34**, 411–424 (2020).

---

110. Ford, J. D. et al. Preparing for the health impacts of climate change in Indigenous communities: the role of community-based adaptation. *Glob. Environ. Change* **49**, 129–139 (2018).

---

111. Ayeb-Karlsson, S. ‘When we were children we had dreams, then we came to Dhaka to survive’: urban stories connecting loss of wellbeing, displacement and immobility. *Clim. Dev.* **13**, 348–359 (2021).

---

112. O’Hare, P., White, I. & Connelly, A. Insurance as maladaptation: resilience and the ‘business as usual’ paradox. *Environ. Plan. C* **34**, 1175–1193 (2016).

---

113. O’Neill, S. et al. Visual portrayals of fun in the sun misrepresent heatwave risks in European newspapers. Preprint at <https://doi.org/10.31235/osf.io/wf9rx> (2022).

---

114. Ewbank, R., Perez, C., Cornish, H., Worku, M. & Woldetsadik, S. Building resilience to El Niño-related drought: experiences in early warning and early action from Nicaragua and Ethiopia. *Disasters* **43**, S345–S367 (2019).

---

115. Bronen, R. Climate-induced community relocations: using integrated social–ecological assessments to foster adaptation and resilience. *Ecol. Soc.* **20**, 36 (2015).

---

116. Internal Displacement Monitoring Centre / Norwegian Refugee Council *Global Report on Internal Displacement 2019* (IDMC, 2019).
- 
117. Karlsson, M., van Oort, B. & Romstad, B. What we have lost and cannot become: societal outcomes of coastal erosion in southern Belize. *Ecol. Soc.* **20**, 4 (2015).
- 
118. Doherty, T.J. & Clayton, S. The psychological impacts of global climate change. *Am. Psychol.* **66**, 265–276 (2011).
- 
119. Warner, J. F. & Meissner, R. Cape Town’s “Day Zero” water crisis: a manufactured media event? *Int.J. Disaster Risk Reduct.* **64**, 102481 (2021).
- 
120. Clarke, D., Murphy, C. & Lorenzoni, I. Place attachment, disruption, and transformative adaptation. *J. Environ. Psychol.* **55**, 81–89 (2018).
- 
121. Brosch, T. Affect and emotions as drivers of climate change perception and action: a review. *Curr. Opin. Behav. Sci.* **42**, 15–21 (2021).
- 
122. Jones, C. A. & Davison, A. Disempowering emotions: the role of educational experiences in social responses to climate change. *Geoforum* **118**, 190–200 (2021).
- 
123. Rao, N. et al. Managing risk, changing aspirations and household dynamics: implications for wellbeing and adaptation in semi-arid Africa and India. *World Dev.* **125**, 104667 (2020).
-

124. Adger, W. N., Barnett, J., Brown, K., Marshall, N. & O'Brien, K. Cultural dimensions of climate change impacts and adaptation. *Nat. Clim. Change* **3**, 112–117 (2013).

---

125. Marshall, N. et al. Reef grief: investigating the relationship between place meanings and place change on the Great Barrier Reef, Australia. *Sustain. Sci.* **14**, 579–587 (2019).

---

126. Sawatzky, A. et al. “The best scientists are the people that’s out there”: Inuit-led integrated environment and health monitoring to respond to climate change in the Circumpolar North. *Climatic Change* **160**, 45–66 (2020).

---

127. Brugnach, M., Craps, M. & Dewulf, A. Including indigenous peoples in climate change mitigation: addressing issues of scale, knowledge and power. *Climatic Change* **140**, 19–32 (2017).

---

128. Walker, S. E., Bruyere, B. L., Yasin, A., Lenaiyasa, E. & Lolemu, A. The good life in the face of climate change: understanding complexities of a well-being framework through the experience of pastoral women. *J. Dev. Stud.* **57**, 1120–1137 (2021).

---

129. Dacks, R. et al. Developing biocultural indicators for resource management. *Conserv. Sci. Pract.* **1**, e38 (2019).

---

130. McCarter, J. et al. Biocultural approaches to developing well-being indicators in Solomon Islands. *Ecol. Soc.* **23**, 32 (2018).

---

131. de Wit, S. & Haines, S. Climate change reception studies in anthropology. *WIREs Clim. Change* **13**, e742 (2022).

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132. Sen, A. Well-being, agency and freedom: the Dewey Lectures 1984. *J. Phil.* **82**, 169–221 (1985).

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## Ethics declarations

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Competing interests

The authors declare no competing interests.

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