

## Adapting to Climate Change

(Melbourne University, 2021)

Welcome to Adapting to Climate Change. This subject focuses on climate change adaptation, and in particular its environmental, political, social and policy dimensions.

### Subject overview

This subject focuses on climate change adaptation, and in particular its environmental, political, social and policy dimensions. It explores the ways which climate change poses risks to human wellbeing, and the ways these risks can be managed. It draws on examples from Australia and the Asia-Pacific region, and in particular from the teaching staff's concurrent research on climate change adaptation in small islands. The subject explains that adaptation and its success can be thought of and approached in multiple ways, shaped in part by existing interests and the varied and dynamic places in which adaptation is being consciously or unconsciously implemented. The subject also highlights that adaptation poses as well as addresses risks, and that decisions about adaptation need to be considered critically and iteratively. The subject is taught in an intensive mode. Topics include:

- Issues of complexity, uncertainty, knowledge, power, and practice in researching and implementing climate change
- The relationship between adaptation and other processes of change, including development
- Strategies for change at global, regional, local and individual scales, their inter-relations and how they may be facilitated.

### Intended learning outcomes

On completion of this subjects students will be able to:

- demonstrate familiarity with climate change adaptation theories and practices
- identify strategies to facilitate adaptation in a range of settings; and
- begin to evaluate the possible strengths and weaknesses of different adaptation strategies in various situations.

### Generic skills

On completion of this subject students will have:

- specialist knowledge in the fields of climate change adaptation and policy
- an ability to apply social-science theories to explain climate change challenges
- an ability to critically evaluate strategies for facilitating climate change adaptation in a range of contexts
- a detailed understanding of climate change risks and responses in at least one practical setting

## Assessment overview

Description	Due	Percentage
An annotated bibliography: 1500 words	Week 9	30%
A presentation on an adaptation case study: 5 minutes	Week 12	10%
An essay: 3000 words	9am, 21 June 2021	60%

## Timetable

Classes will run over six weeks over weeks 7-12 of the semester (i.e. from the week starting the 19th of April, with the last class on Friday 28th May). There will be 2x1hr lectures, 2x1hr Q&A seminars and 2x1hr tutorials each week.

The lectures will be pre-recorded and uploaded to LMS on the Monday evening of each teaching week, so you can watch these at a time that is most convenient for you. The seminars will be live Zoom meetings at the scheduled lectures to allow time to ask specific questions to the lecturer - these are not compulsory.

## Subject expectations

What do we expect from students:

- This is an intensive course. This means that there is a lot of content, and a huge part of the teaching is done in the tutorials. We expect that students participate in the tutorials and interact with other students in the tutorials (and discussion boards or elsewhere as appropriate).
- We expect all participation to be respectful.
- Students are expected to have watched the lectures and read the readings before the tutorials. The tutes are designed to build off that material, so these will be far more useful to you if you come prepared.

What students can expect from us:

- Responses to questions by the end of the next business day (see the bottom of the subject [communications](#) page),
- Fair and professional treatment,
- Enthusiasm,
- Materials provided online in a timely way, and
- That we will present challenging and interesting material that mixes theory, events, case studies, and contemporary issues.

## Course overview

Below is a brief overview of each week's theme, learning objectives and lecture topics. Lectures will be pre-recorded and will be available on the LMS on the Monday evening each week, along with the accompanying lecture slides. The scheduled lecture times will be used for a live Zoom

'seminar' Q&A session where you can come and ask the lecturer your specific questions on that week's topics.

## **Week 1: Welcome**

### **Introduction and overview**

In Lecture 1 we introduce you to the topic of adapting to climate change, focussing on the ways in which climate change poses risks to human well-being and the ways these risks can be managed, with particular emphasis on environmental, political, social and policy dimensions. We ask whether we should be concerned with planning for a changing climate and we unpack some of the challenges presented by adaptation. This introductory lecture also provides an overview of the subject including the course objectives, structure and assessment requirements.

### **Vulnerability: Do we know much atoll?**

Lecture 2 uses the case study of Pacific Atolls to illustrate some of the challenges and complexities of adapting to climate change, even in seemingly simple ecosystems that are critically at risk and which we might think we know a lot about. It raises questions about what we know about climate change and about adaptation, highlighting how different narratives of adaptation can have very real consequences, and pointing to some of the dangers arising from poorly informed adaptation practices.

### **Learning objectives**

This is an introductory week, at the end of which students should be able to:

- Describe the objectives, structure and assessment requirements of the subject
- Describe, in general terms, what climate change adaptation is and why it is of concern to us
- Discuss, in general terms, the historical and contemporary context of climate change adaptation
- Identify the relevance of the subject to their own academic/professional practice
- Identify a topic of interest to them that will be used as a basis for course assessment

## **Week 2: Core concepts and context**

### **What is this thing called adaptation?**

Lecture 3 establishes some important practical and conceptual foundations of climate change adaptation, including corollary concepts such as vulnerability, adaptive capacity, exposure and sensitivity. It explores ongoing debates surrounding key adaptation concepts, with a particular emphasis on the drivers of climate change risk and vulnerability, and places adaptation in context with related fields of practice and research including sustainable development and emergency management.

### **Adaptation, planning, pathways, and time**

Lecture 4 describes an example of planning for climate change, introduces the importance of thinking about adaptation as a process of change over time, and explains the concept of adaptation pathways.

### **Learning objectives**

By the end of this week, students should be able to:

- Contextualise climate change adaptation in relation to other science and policy issues
- Describe important foundational concepts of climate change adaptation including climate change, vulnerability, adaptive capacity, adaptation & resilience
- Discuss the politics, implications and limitations of how we 'know' about climate change adaptation
- Describe key approaches to identifying and prioritising climate change adaptation strategies
- Describe key enablers of adaptation, and how these relate to the socio-cultural values and goals that underpin adaptation to climate change
- Discuss the challenges of measuring success in adaptation
- Consolidate their topic for the course assessments

### **Week 3: How does adaptation work in practice?**

#### **Adaptation options, choices, barriers and maladaptation**

- Describe key approaches to identifying and prioritising climate change adaptation strategies
- Describe key barriers to adaptation, and how these relate to the socio-cultural values and goals that underpin adaptation to climate change
- Discuss the potential risks arising from adaptation choices

#### **Community-based adaptation**

Lecture 6 will cover community-based adaptation (CBA). The lecture lays the fundamentals of community-led adaptation interventions; it explains how CBA is a bottom-up approach, how it is based on communities' needs, priorities, capacities and knowledge and how it has the potential to empower community members. The lecture will use a practical case study from a project in an atoll in the Republic of the Marshall Islands to illustrate the positive and negative aspects of CBA projects.

- Describe the rationale behind CBA (what is it, who does it and why do it) and its potential contribution to address the impacts of climate change, including shortcomings and recent re-conceptualisations
- Identify the elements that make CBA a social process
- Discuss how different perspectives on the idea of 'community' and 'the communal' complicate CBA approaches and their potential to influence collective action on adaptation.

### **Week 4: Power and money**

#### **The economics of adaptation**

It is often assumed that climate change adaptation is a simple matter of getting the economics right. That is, assessing the costs and benefits of adaptation using economic instruments will decide, enable, and allocate the most effective and efficient actions. Lecture 7 will unpack these

assumptions and introduce students to common economic methodologies for adaptation. It will describe, first, how economic models are used to estimate the cost of adaptation. Second, it will introduce economic instruments that hope to facilitate efficient adaptation to climate change. Finally, it will draw out the assumptions underlying such economic tools and point to some of their limitations.

### **Adaptation financing and aid**

Many underdeveloped and vulnerable countries lobby through international forums that adaptation financing is a matter of justice and must be increased substantially to meet the costs of adaptation. Lecture 8 investigates the current state of adaptation finance. First, it introduces existing definitions of adaptation finance and describes the existing global financial architecture for adaptation through the UNFCCC. Second, it discusses the diverse sources of adaptation finance, and shows existing financial flows. Third the lecture will critically explore the politics of aid in the context of adaptation financing.

### **Learning objectives**

By the end of this week, students should be able to:

- Describe methodologies for calculating the costs of adaptation and economic tools for encouraging adaptation
- Describe the global adaptation financing architecture
- Discuss and contrast economic instruments, their assumptions, and their potentials and limitations
- Discuss the politics, relations, compromises, and contradictions of global adaptation finance, including relations with development assistance, newness and additionality, and mainstreaming

## **Week 5: Governance and Practice**

### **Governing adaptation**

Lecture 9 asks who is responsible for adaptation. It argues that ‘who does what’ is just as important for adaptation as ‘what is to be done’ and explores the role of politics in governance for adaptation. It discusses the challenges that adaptation poses for the allocation of responsibility between public and private actors, between government and business and civil society, between levels of governance, and between generations.

### **The way forward for atolls**

Lecture 10 revisits the case of Pacific Atolls to draw together some key themes and topics covered in the subject. This lecture moves beyond the discussion about ‘barriers’, and ‘limits’ to adaptation in atolls to explore constructive ways forward, highlighting some of the key enablers and practices already present, and the potential for novel technologies, new practices, and planning and governance institutions to sustain meaningful and dignified lives on atolls.

### **Learning objectives**

By the end of this week, students should be able to:

- Describe the principal institutions involved in adaptation governance
- Discuss the challenges of allocating responsibility for adaptation

- Discuss the implications of different governance models at various scales
- Discuss the changing political drivers of adaptation governance in different parts of the world
- Identify the actors involved in the governance of your adaptation issue, the current allocation of responsibility between these actors and the implications of this current arrangement for effective and fair governance
- Discuss the way different technologies and practices can be combined with planning and governance to achieve desired adaptation outcomes

## **Week 6: Expert Panel**

### **How do we do this thing called adaptation?**

Lecture 11 will bring together a panel of adaptation practitioners from a number of disciplines to discuss their work in adaptation. This will be a chance for the students to hear how adaptation planning and projects actually play out on the ground and will also be a chance for students to ask questions and gain an insight into what it takes to have a career in adaptation.

***\*Note that the scheduled Lecture 12 seminar time will be taken up with student presentations***

### **Learning objectives**

By the end of this week, students should be able to:

- Identify some of the challenges and opportunities of working in the field of adaptation.

## **Week 1 required readings**

There will be a number of required readings each week that will supplement the material presented in the lectures as well as inform tutorial discussions. The readings will be made available a week prior to the lectures, and it is expected that students will have read the material before coming to class.

For Week 1, there are four required readings - please click on the titles to access:

- [Adger, N & Barnett, J 2009 'Four reasons for concern about adaptation to climate change', \*Environment and Planning A\*, 41\(12\) pp.2800-2805. doi:10.1068/a42244](#)
- [Werner, J. 2020. \*Mitigation or adaptation?\* ABC News, Jan 17 \(Links to an external site.\)](#)
- [Hayward, B., Salili, D.H., Tupuana'i, L.L. and Tualamali'i, J., 2020. It's not "too late": Learning from Pacific Small Island Developing States in a warming world. \*Wiley Interdisciplinary Reviews: Climate Change\*, 11\(1\), p.e612. doi:10.1002/wcc.612](#)
- [Ball, J. 2018. With climate change no longer in the future, adaptation speeds up. \*New York Times\*, Sept 21.](#)

## **Week 2 required reading**

Please click through to the links. You will need to login to your university library account to access some the readings.

### Readings for Lecture 3:

- Pages 159-170 of: [Barnett, J. and Campbell, J. 2010. \*Climate Change and Small Island States. Power, Knowledge and the South Pacific\*, Earthscan, London](#)
- Turner, M. 2016. Climate vulnerability as a relational concept. *Geoforum* 68: 29-38.
- Shamsie, K. 2010. Pakistan's floods are not just a natural disaster. *The Guardian*, August 5: <https://www.theguardian.com/commentisfree/2010/aug/05/pakistan-floods-failure-state>
  - *Optional extra reading:*
    - Repetto, R. 2008. *The Climate Crisis and the Adaptation Myth*, Yale School of the Environment Publications Series. 9. <https://elischolar.library.yale.edu/fes-pubs/9> (Links to an external site.)
    - This 30 min podcast is framed as a discussion about Loss and Damage (L&D), and finance for L&D, under the UNFCCC negotiations, and so is a good explanation of the limits to adaptation, as well as the link with finance under the UNFCCC which we'll talk about in lecture 8: <https://www.iied.org/loss-damage-recognising-costs-climate-change-make-change-happen-podcast-episode-10>

### Readings for Lecture 4:

- Mcleod, E., Bruton-Adams, M., Förster, J., Franco, C., Gaines, G., Gorong, B., James, R., Posing-Kulwaum, G., Tara, M. and Terk, E., 2019. Lessons from the Pacific Islands— Adapting to climate change by supporting social and ecological resilience. *Frontiers in Marine Science*: [doi:10.3389/fmars.2019.00289](https://doi.org/10.3389/fmars.2019.00289)
- Narayan, S., Esteban, M., Albert, S., Jamero, M.L., Crichton, R., Heck, N., Goby, G. and Jupiter, S., 2020. Local adaptation responses to coastal hazards in small island communities: insights from 4 Pacific nations. *Environmental Science & Policy*, 104, pp.199-207. doi:[10.1016/j.envsci.2019.11.006](https://doi.org/10.1016/j.envsci.2019.11.006)
- Bramwell, C. 2016. *Fighting the Pacific's Rising Seas*. RNZ July 17. <https://www.rnz.co.nz/national/programmes/insight/audio/201808104/insight-fighting-the-pacific%27s-rising-seas>

### Week 3 required readings-2

Please click through to the links. You will need to login to your university account to access some the readings.

### Readings for Lecture 5:

- Barnett, J., L. S. Evans, C. Gross, A. S. Kiem, R. T. Kingsford, J. P. Palutikof, C. M. Pickering, and S. G. Smithers. 2015. 'From barriers to limits to climate change adaptation: path dependency and the speed of change'. *Ecology and Society* 20(3): 5. <http://dx.doi.org/10.5751/ES-07698-200305>

- Eisenack, Klaus, Moser, Susanne C., Hoffmann, Esther, Klein, Richard J. T., Oberlack, Christoph, Pechan, Anna, . . . Termeer, Catrien J. A. M. (2014). Explaining and overcoming barriers to climate change adaptation. *Nature Climate Change*, 4(10), 867-872. [doi:10.1038/nclimate2350](https://doi.org/10.1038/nclimate2350)
- Environment Victoria, Victoria, Heatwaves & Climate Change, <https://environmentvictoria.org.au/our-campaigns/safe-climate/victoria-heatwaves-climate-change/> (Links to an external site.)
- Readfearn, Graham. 2020. Inside Australia's climate emergency: the taps run dry. *The Guardian*, Feb 7: <https://www.theguardian.com/environment/ng-interactive/2020/feb/17/a-climate-emergency-what-happens-when-the-taps-run-dry>

#### Readings for Lecture 6:

- Kirkby, P., Williams, C., & Huq, S. (2018). Community-based adaptation (CBA): Adding conceptual clarity to the approach, and establishing its principles and challenges. *Climate and Development*, 10(7), 577–589. [doi:10.1080/17565529.2017.1372265](https://doi.org/10.1080/17565529.2017.1372265) (Links to an external site.)
- Titz, A., Cannon, T., & Krüger, F. (2018). Uncovering ‘Community’: Challenging an Elusive Concept in Development and Disaster Related Work. *Societies*, 8(3), 71. [doi:10.3390/soc8030071](https://doi.org/10.3390/soc8030071) (Links to an external site.)

#### Optional extra readings:

- Yarina, E., & Takemoto, S. (2017). Interrupted Atolls: Riskscales and Edge Imaginaries in Tuvalu. *The Plan Journal*, 2(2). <https://doi.org/10.15274/tpj.2017.02.02.15> (Links to an external site.) (This is one of the readings for Lecture 10, but the section on hard and soft approaches from the bottom of page 472-479 is also useful here).

#### Week 4 required readings-2

Please click through to the links. You will need to login to your university library account to access some the readings.

#### Readings for Lecture 7:

- Cooper, J.A.G. and McKenna, J., 2008. Social justice in coastal erosion management: The temporal and spatial dimensions. *Geoforum*, 39(1), pp.294-306.
- Kuper, S. 2020. Can the Dutch save the world from the danger of rising sea levels? *Financial Times*, January 30. See [Can the Dutch save the world from the danger of rising sea levels? | Financial Times-1.pdf](#)

#### Actions

- *Optional extra reading:*
  - P. Pauw, L. Kempa, U. Moslener, C. Grüning & C. Çevik (2021) A focus on market imperfections can help governments to mobilize private investments



*in adaptation, Climate and Development*, [doi:10.1080/17565529.2021.1885337](https://doi.org/10.1080/17565529.2021.1885337)

- Fankhauser, S. (2017). *Adaptation to Climate Change*. In G. C. Rausser & D. Zilberman (Eds.), *Annual Review of Resource Economics*, 9, 209-230. [doi:10.1146/annurev-resource-100516-033554](https://doi.org/10.1146/annurev-resource-100516-033554)

#### Readings for Lecture 8:

- Remling, Elise, & Persson, Asa. (2015). Who is adaptation for? Vulnerability and adaptation benefits in proposals approved by the UNFCCC Adaptation Fund. *Climate and Development*, 7(1), 16-34. [doi:10.1080/17565529.2014.886992](https://doi.org/10.1080/17565529.2014.886992)
- Ghosh, Arunabha, & Woods, Ngaire. (2009). [Developing country concerns about climate finance proposals: Priorities, trust, and the credible donor problem \(Links to an external site.\)](#). In Richard B. Stewart, Benedict Kingsbury, & Bryce Rudyk (Eds.), *Climate finance: Regulatory and funding strategies for climate change and global development* (pp. 157-164). New York: NYU.
- Hammill, Anne, & McGray, Heather. (2018). Is it Adaptation or Development? Revisiting the Continuum 10 years later. Retrieved from <https://www.iisd.org/story/is-it-adaptation-or-development/>
- [Links to an external site.](#)Optional extra reading:
  - *If you find the various international climate funds hard to keep track of, section 3 of this IIED working paper might be useful: Patel, S, Soanes, M, Rahman, F, Smith, B and Steinbach, D (2020) Good climate finance guide: lessons for strengthening devolved climate finance. IIED Working Paper, IIED, London. <http://pubs.iied.org/10207IIED> (Links to an external site.)*
  - Khan, Mizan R., & Roberts, J. Timmons. (2013). *Adaptation and international climate policy. WIREs Climate Change*, 4(3), 171-189. [doi:10.1002/wcc.212](https://doi.org/10.1002/wcc.212)
  - Pauw, P, Weikmans, R, Watson, C, Jahns, H, Prowse, M, Quevedo, A and Puri, J. (2021) *Global progress on financing for adaptation. In Adaptation Gap Report 2020 (pp 23-32). Nairobi: United Nations Environment Programme (UNEP). <https://www.unep.org/resources/adaptation-gap-report-2020> (Links to an external site.)*

Students are often interested in additional recommendations for reading about the Bretton Woods institutes and the history of aid finance. Some suggestions to get started in this area:

- Weaver, Catherine. (2008). *Hypocrisy trap: The World Bank and the poverty of reform*. Princeton, NJ: Princeton University Press.
- Babb, Sarah. (2003). The IMF in Sociological Perspective: A Tale of Organizational Slippage. *Studies in Comparative International Development*, 38, Summer 2003(2), 3-27.
- Barnett, Michael N., & Finnemore, Martha. (1999). The Politics, Power, and Pathologies of International Organizations. *International Organization*, 53(4), 699-732.

## Week 5 required readings-2

Please click through to the links. You will need to login to your university library account to access some the readings.

Readings for Lecture 9:

- Bednar, D., Henstra, D., & McBean, G. (2019). The governance of climate change adaptation: are networks to blame for the implementation deficit? *Journal of Environmental Policy & Planning*, 21(6), 702-717. [doi:10.1080/1523908x.2019.1670050](https://doi.org/10.1080/1523908x.2019.1670050) ([Links to an external site.](#))
- Le Thi Hong Phuong, G. Robbert Biesbroek & Arjen E. J. Wals (2018) Barriers and enablers to climate change adaptation in hierarchical governance systems: the case of Vietnam, *Journal of Environmental Policy & Planning*, 20:4, 518-532. [doi:10.1080/1523908X.2018.1447366](https://doi.org/10.1080/1523908X.2018.1447366) ([Links to an external site.](#))
- Weeks, J. 2016. Coping with heat wave. *The Conversation* July 6. Access via: <https://theconversation.com/coping-with-heat-waves-5-essential-reads-99495> ([Links to an external site.](#))

Readings for Lecture 10:

- Laurice Jamero, M., Onuki, M., Esteban, M., Billones-Sensano, X. K., Tan, N., Nellas, A., . . . Valenzuela, V. P. (2017). Small-island communities in the Philippines prefer local measures to relocation in response to sea-level rise. *Nature Climate Change*, 7(8), 581-586. [doi:10.1038/nclimate3344](https://doi.org/10.1038/nclimate3344) ([Links to an external site.](#))
- Yarina, E., & Takemoto, S. (2017). Interrupted Atolls: Risksapes and Edge Imaginaries in Tuvalu. *The Plan Journal*, 2(2). [doi:10.15274/tpj.2017.02.02.15](https://doi.org/10.15274/tpj.2017.02.02.15)
- Watch these very short (1-3 minute) films: <http://racingthekingtide.com/portfolio/> ([Links to an external site.](#)), and click on "Film" (though I would recommend exploring the entire site).

## Week 6 required readings-2

Week 6: please click through to the links. You will need to login to your university library account to access some the readings.

- Stafford-Smith, M, Horrocks, L, Harvey, A & Hamilton, C 2011, Rethinking adaptation for a 4C world, *Philosophical Transactions of the Royal Society*, vol.369, pp.196-216. [doi:10.1098/rsta.2010.0277](https://doi.org/10.1098/rsta.2010.0277)