SYLLABUS

CLIMATE AND SOCIETAL CHANGES

INSTRUCTORS

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COURSE DESCRIPTION

This master class examines the multifaceted relationship between climate change and societal dynamics, focusing on how these elements influence one another across various demographic groups. The course is structured around key themes that address the intersections of climate change with economic development, gender inequality, health, demographics, migration, and political economy.

MAIN TOPICS and REFERENCES

1. **Climate Change and Inequalities**: Explore the impact of climate change on economic growth and development strategies, analyzing how environmental challenges can hinder progress and exacerbate inequalities.

   Experiment: Pollution, Taxes and Permits

   WORLD CLIMATE SIMULATION

   Boyce, J.K. 2008, Equity and the Environment Research in Social Problems and Public Policy, Volume 15, 267–288.

   Bruckner, B., Hubacek, K., Shan, Y. et al. 2022, Impacts of poverty alleviation on national and global carbon emissions, *Nat Sustain* 5, 311–320.

   Carleton, Tamma and Greenstone, Michael, Updating the United States Government's Social Cost of Carbon (November 12, 2021). University of Chicago, Becker Friedman Institute for Economics Working Paper No. 2021-04.

   Chancel, L. Global carbon inequality over 1990–2019 2022, *Nat Sustain* 5, 931–938.

Chancel, L., Bothe, P., Voituriez, T. 2023, Climate Inequality Report 2023, World Inequality Lab Study 2023/1.

Chancel, L., Piketty, T., Saez, E., Zucman, G. et al. World Inequality Report 2022, World Inequality Lab wir2022.wid.world.

Chancel, L., Rehm, Y. 2023, The Carbon Footprint of Capital: Evidence From France, Germany and the US, *Working Paper N°2023/26*, World Inequality Lab.

Diffenbaugh, N., S. and Burke M. 2019, Global warming has increased global economic inequality, *PNAS*, Vol.116, No.20, p.9808-9813.

Fabre, Adrien and Douenne, Thomas and Mattauch, Linus, International Attitudes Toward Global Policies (May 28, 2024). Available at SSRN: https://ssrn.com/abstract=4448523.

Fowlie M., Greenstone M., Wolfram C. 2018, Do Energy Efficiency Investments Deliver? Evidence from the Weatherization Assistance Program, *The Quarterly Journal of Economics*, Vol. 133, Issue 3, August, Pages 1597–1644.

Hallegatte, S., Rozenberg, J. 2017, Climate change through a poverty lens, *Nature Clim Change* 7, 250–256.

Obradovich N, Migliorini R, Paulus MP, Rahwan I. 2018, Empirical evidence of mental health risks posed by climate change, *Proc Natl Acad Sci U S A*, Oct 23;115(43):10953-10958.

Rentschler, J., Salhab, M. and Jafino, B.A. Flood exposure and poverty in 188 countries. *Nat Commun* 13, 3527 (2022).

2. **Climate Change and Social Inequality:** Investigate the ways in which climate change disproportionately affects women and marginalized groups, highlighting the importance of integrating gender perspectives into climate policy and action.

Astghik Mavisakalyan, Yashar Tarverdi (2019), Gender and climate change: Do female parliamentarians make a difference?, *European Journal of Political Economy*, Volume 56, Pages 151-164, https://doi.org/10.1016/j.ejpoleco.2018.08.001.

Banzhaf, S., Ma, L., & Timmins, C. (2019), Environmental Justice: The Economics of Race, Place, and Pollution, *The Journal of Economic Perspectives*, *33*(1), 185–208. https://www.jstor.org/stable/26566983.

Cook, N.J., Grillos, T. & Andersson, K.P. Gender quotas increase the equality and effectiveness of climate policy interventions. *Nat. Clim. Chang.* 9, 330–r 334 (2019). https://doi.org/10.1038/s41558-019-0438-4.

Duflo, Esther (2012), Women Empowerment and Economic Development, *Journal of Economic Literature*, 50 (4): 1051–79.

OECD (2023), "The gender equality and environment intersection: An overview of development co-operation frameworks and financing", OECD Publishing, Paris.

Omar Basyouny (2023), Climate Change and Gender Inequality, *Intersect*, Vol 16, No 3.

Yener Altunbas, Leonardo Gambacorta, Alessio Reghezza, Giulio Velliscig, Does gender diversity in the workplace mitigate climate change? (2022), *Journal of Corporate Finance*, Volume 77, https://doi.org/10.1016/j.jcorpfin.2022.102303.

3. **Climate Change and Demographics I - Health, Death, Epidemics** : Examine the health implications of climate change, including the rise of epidemics, increased mortality rates, and the particular vulnerabilities faced by different demographic groups.

Burke, M., F. González, P. Baylis, S. Heft-Neal, C. Baysan, S. Basu, and S. Hsiang (2018). ``Higher temperatures increase suicide rates in the United States and Mexico". *Nature Climate Change* 8.8, pp. 723–729 (cit. on pp. 63, 64).

Chancel, L., Bothe, P., Voituriez, T. 2023, Climate Inequality Report 2023, World Inequality Lab Study 2023/1.

Cissé, G. et al. (2022). ``Health, Wellbeing, and the Changing Structure of Communities." In: Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 1041–1170 (cit. on pp. 15, 59).

Hsiang S, Kopp R, Jina A, Rising J, Delgado M, Mohan S, Rasmussen DJ, Muir-Wood R, Wilson P, Oppenheimer M, Larsen K, Houser T. Estimating economic damage from climate change in the United States. *Science*. 2017 Jun 30;356(6345):1362-1369.

Messina, J., O. Brady, and N. Golding (2019). ``The current and future global distribution and population at risk of dengue", *Nat. Microbiol* 4, pp. 1508–1515 (cit. on pp. 61, 62).

Romanello, M. et al. (2021). ``The 2021 report of the Lancet Countdown on health and climate change: code red for a healthy future". *The Lancet* 398.10311, pp. 1619–1662 (cit. on pp. 59, 60).

Rataj, E., K. Kunzweiler, and S. Garthus-Niegel (2016). ``Extreme weather events in developing countries and related injuries and mental health disorders a systematic review". *BMC Public Health* 16, p. 1020 (cit. on p. 66).

T. Carleton, A. Jina, M. Delgado, M. Greenstone, T. Houser, S. Hsiang, A. Hultgren, R. E. Kopp, K. E. McCusker, I. Nath, J. Rising, A. Rode, H. K. Seo, A. Viaene, J. Yuan, A. Tianbo Zhang, Valuing the Global Mortality Consequences of Climate Change Accounting for Adaptation Costs and Benefits, *The Quarterly Journal of Economics*, Volume 137, Issue 4, November 2022, Pages 2037–2105.

4. **Climate Change and Demographics II - Marriage/Fertility**: Analyze how climate change influences demographic trends such as marriage patterns and fertility rates, considering the socio-economic factors that drive these changes.

   Alam, S. A., and Pörtner, C. C. (2018). "Income shocks, contraceptive use, and timing of fertility". *Journal of Development Economics*, 131, 96-103.

   Asadullah M.N., Islam K.M.M., Wahhaj Z. (2021). "Child marriage, climate vulnerability and natural disasters in coastal Bangladesh". *Journal of Biosocial Science*, 53(6):948-967.

   Barreca, A., Deschenes, O., and Guldi, M. (2018). "Maybe next month? Temperature shocks and dynamic adjustments in birth rates". *Demography*, 55(4), 1269-1297.

   Carrico, A. R., Donato, K. M., Best, K. B., and Gilligan, J. (2020). "Extreme weather and marriage among girls and women in Bangladesh". *Global Environmental Change*, 65, 102160.

   Casey, G., Shayegh, S., Moreno-Cruz, J., Bunzl, M., Galor, O., and Caldeira, K. (2019). The impact of climate change on fertility. *Environmental Research Letters*, 14(5), 054007.

   Cho, H. (2020). "Ambient temperature, birth rate, and birth outcomes: evidence from South Korea". *Population and Environment*, 41, 330-346.

   Chort, I., Hotte, R., and Marazyan, K. (2022). "Income shocks, bride price and child marriage in Turkey". Working Paper.

   Corno, L., Hildebrandt, N., and Voena, A. (2020). "Age of marriage, weather shocks, and the direction of marriage payments". *Econometrica*, 88(3), 879-915.

   Corno, L., and Voena, A. (2021). Selling daughters: Child Marriage, Income Shocks and the Bride Price Tradition. Working Paper.

   Davis, J. (2017). "Fertility after natural disaster: Hurricane Mitch in Nicaragua". *Population and Environment*, 38, 448-464.

Dessy, S., Marchetta, F., Pongou, R., and Tiberti, L. (2019). "Fertility response to climate shocks". Partnership for Economic Policy Working Paper, (2019-06).

Dessy, S., Tiberti, L., Tiberti, M., and Zoundi, D. (2024). "Coping with Drought in Village Economies: The Role of Polygyny" (No. wp2024-13). Universita'degli Studi di Firenze.

Eissler, S., Thiede, B. C., and Strube, J. (2019). "Climatic variability and changing reproductive goals in Sub-Saharan Africa". *Global Environmental Change*, 57, 101912.

Finlay, J. (2009). "Fertility response to natural disasters: the case of three high mortality earthquakes". World Bank Policy Research Working Paper, (4883).

Grace, K. (2017). "Considering climate in studies of fertility and reproductive health in poor countries". *Nature Climate Change*, 7(7), 479-485.

Hajdu, T., and Hajdu, G. (2022). "Temperature, climate change, and human conception rates: evidence from Hungary". *Journal of Population Economics*, 35(4), 1751-1776.

Jennings, J. A., and Gray, C. L. (2017). "Climate and marriage in the Netherlands, 1871–1937". *Population and Environment*, 38, 242-260.

Kumala Dewi, L. P. R., and Dartanto, T. (2018). "Natural disasters and girls vulnerability: is child marriage a coping strategy of economic shocks in Indonesia?". *Vulnerable Children and Youth Studies*, 14(1), 24–35.

Lam, D. A., and Miron, J. A. (1996). *The effects of temperature on human fertility*. *Demography*, 33(3), 291-305.

McGavock, T., and Novak, L. (2023). "Now, Later, or Never? Evidence of the effect of weather shocks on female genital cutting in Sub-Saharan Africa". *Journal of Development Economics*, 165, 103168.

Nobles, J., Frankenberg, E., and Thomas, D. (2015). "The effects of mortality on fertility: population dynamics after a natural disaster". *Demography*, 52(1), 15-38.

Pasten, R., Figueroa, E., Muñoz, D., and Colther, C. (2020). "Not a dream wedding: The hidden nexus between climate change and child marriage" (No. wp508, University of Chile).

Pope, D. H., McMullen, H., Baschieri, A., Philipose, A., Udeh, C., Diallo, J., and McCoy, D. (2023). "What is the name current evidence for the relationship between the climate and environmental crises and child marriage? A scoping review". *Global Public Health*, 18(1), 2095655.

Rosenzweig, M. R., and Stark, O. (1989). "Consumption Smoothing, Migration, and Marriage: Evidence from Rural India". *Journal of Political Economy*, 97(4), 905–926.

Sekhri, S., and Storeygard, A. (2014). "Dowry deaths: Response to weather variability in India". *Journal of Development Economics*, 111, 212-223.

Sellers, S., and Gray, C. (2019). "Climate shocks constrain human fertility in Indonesia". *World Development*, 117, 357-369.

Tapsoba, A. (2022). "Polygyny and the economic determinants of family formation outcomes in Sub-Saharan Africa" (No. 1240). TSE Working Paper.

Thiede, B. C., Ronnkvist, S., Armao, A., and Burka, K. (2022). "Climate anomalies and birth rates in sub-Saharan Africa". *Climatic Change*, 171(1), 5.

Trinh, T. A., Zhang, Q. (2021). "Adverse shocks, household expenditure and child marriage: evidence from India and Vietnam". *Empirical Economics*, 61, 1617–1639.

Tsaneva, M. (2020). "The effect of weather variability on child marriage in Bangladesh". *Journal of International Development*, 32(8), 1346-1359.

5. **Climate Change and Migration**: Discuss the effects of climate change on migration patterns, focusing on how environmental degradation forces communities to relocate and the social implications of these movements.

Arouri, M., Nguyen, C., and Youssef, A. B. (2015). Natural disasters, household welfare, and resilience: evidence from rural Vietnam. *World Development*, 70, 59-77.

Beine, M., and Jeusette, L. (2021). "A meta-analysis of the literature on climate change and migration". *Journal of Demographic Economics*, 87(3), 293-344.

Beine, M., and Parsons, C. (2015). "Climatic factors as determinants of international migration". *The Scandinavian Journal of Economics*, 117(2), 723-767.

Benveniste, H., Oppenheimer, M., and Fleurbaey, M. (2022). "Climate change increases resource-constrained international immobility". *Nature Climate Change*, 12(7), 634-641.

Bohra-Mishra, P., Oppenheimer, M., and Hsiang, S. M. (2014). "Nonlinear permanent migration response to climatic variations but minimal response to disasters". *Proceedings of the National Academy of Sciences*, 111(27), 9780-9785.

Cai, R., Feng, S., Oppenheimer, M., and Pytlikova, M. (2016). "Climate variability and international migration: The importance of the agricultural linkage". *Journal of Environmental Economics and Management*, 79, 135-151.

Cattaneo, C., and Peri, G. (2016). "The migration response to increasing temperatures". *Journal of Development Economics*, 122, 127-146.

Chort, I., and de La Rupelle, M. (2022). "Managing the impact of climate on migration: Evidence from Mexico". *Journal of Population Economics*, 35(4), 1777-1819.

Coniglio, N. D., and Pesce, G. (2015). "Climate variability and international migration: an empirical analysis". *Environment and Development Economics*, 20(4), 434-468.

Cui, X., and Feng, S. (2020). "Climate change and migration". *Handbook of Labor,*

Human Resources and Population Economics, 1-15.
Feng, S., Krueger, A. B., and Oppenheimer, M. (2010). "Linkages among climate change, crop yields and Mexico–US cross-border migration". *Proceedings of the National Academy of Sciences*, 107(32), 14257-14262.
Feng, S., Oppenheimer, M., and Schlenker, W. (2012). "Climate change, crop yields, and internal migration in the United States" (No. w17734). National Bureau of Economic Research.
Ghimire, R., Ferreira, S., and Dorfman, J. H. (2015). Flood-induced displacement and civil conflict. *World Development*, 66, 614-628.
Gray, C. L., and Mueller, V. (2012). "Natural disasters and population mobility in Bangladesh". *Proceedings of the National Academy of Sciences*, 109(16), 6000-6005.
Henderson, J. V., Storeygard, A., and Deichmann, U. (2014). "50 years of urbanization in Africa: Examining the role of climate change". *World Bank Policy Research Working Paper*, (6925).
Hirvonen, K. (2016). "Temperature changes, household consumption, and internal migration: Evidence from Tanzania". *American Journal of Agricultural Economics*, 98(4), 1230-1249.
Hornbeck, R. (2012). "The enduring impact of the American Dust Bowl: Short-and long-run adjustments to environmental catastrophe". *American Economic Review*, 102(4), 1477-1507.
Hsiang, S. M., Burke, M., and Miguel, E. (2013). Quantifying the influence of climate on human conflict. *Science*, 341(6151), 1235367.
Jessoe, K., Manning, D. T., and Taylor, J. E. (2018). Climate change and labour allocation in rural Mexico: Evidence from annual fluctuations in weather. *The Economic Journal*, 128(608), 230-261.
Kleemans, M. (2023). Migration choice under risk and liquidity constraints. Working paper.
Marchiori, L., Maystadt, J. F., and Schumacher, I. (2012). "The impact of weather anomalies on migration in sub-Saharan Africa". *Journal of Environmental Economics and Management*, 63(3), 355-374.
Mbaye, L. M., and Zimmermann, K. F. (2016). "Natural disasters and human mobility".
Nawrotzki, R. J., Hunter, L. M., Runfola, D. M., and Riosmena, F. (2015). "Climate change as a migration driver from rural and urban Mexico". *Environmental Research Letters*, 10(11), 114023.
Reuveny, R. (2007). Climate change-induced migration and violent conflict. *Political Geography*, 26(6), 656-673.
Ruiz, V. (2017). "Do climatic events influence internal migration? Evidence from Mexico". *FAERE Working Paper*, 2017, 19.

Strobl, E. (2011). "The economic growth impact of hurricanes: Evidence from US coastal counties". *Review of Economics and Statistics*, 93(2), 575-589.

Yang, D., and Choi, H. (2007). "Are remittances insurance? Evidence from rainfall shocks in the Philippines". *The World Bank Economic Review*, 21(2), 219-248.

6. **Climate Change and Political Economy**: Explore the political and economic frameworks that shape responses to climate change, examining how power dynamics and policy decisions impact vulnerable populations and contribute to social inequalities.

Andre, P., Boneva, T., Chopra, F., et Falk, A. (2024). "Globally representative evidence on the actual and perceived support for climate action". *Nature Climate Change, 14*(3), 253-259.

Angrist, N., Winseck, K., Patrinos, H. A., et Zivin, J. G. (2024). "Human capital and climate change". *Review of Economics and Statistics*, 1-28.

Beattie, G. (2024). "Measuring Social Benefits of Media Coverage: How Coverage of Climate Change Affects Behaviour". *The Economic Journal*, ueae067.

Bowen, T. R., Dmitriev, D., et Galperti, S. (2023). "Learning from shared news: When abundant information leads to belief polarization". *The Quarterly Journal of Economics, 138*(2), 955-1000.

Cook, N. J., Grillos, T., et Andersson, K. P. (2019). "Gender quotas increase the equality and effectiveness of climate policy interventions". *Nature Climate Change, 9*(4), 330-334.

Dechezleprêtre, A., Fabre, A., Kruse, T., Planterose, B., Chico, A. S., et Stantcheva, S. (2022). "Fighting climate change: International attitudes toward climate policies" (No. w30265). *National Bureau of Economic Research*.

Dixon, G., Clarke, C., Jacquet, J., Evensen, D. T., et Hart, P. S. (2024). "The complexity of pluralistic ignorance in Republican climate change policy support in the United States". *Communications Earth and Environment, 5*(1), 76.

Djourelova, M., Durante, R., Motte, E., et Patacchini, E. (2024a). "Media Slant and Public Policy Views". Dans *AEA Papers and Proceedings* (Vol. 114, pp. 684-689).

Djourelova, M., Durante, R., Motte, E., et Patacchini, E. (2024b). "Experience, Narratives, and Climate Change Beliefs".

Douenne, T., et Fabre, A. (2020). "French attitudes on climate change, carbon taxation and other climate policies". *Ecological Economics, 169*, 106496.

Furceri, D., Ganslmeier, M., et Ostry, J. (2023). "Are climate change policies politically costly?". *Energy Policy, 178*, 113575.

Funk, P., et Gathmann, C. (2015). "Gender gaps in policy making: Evidence from direct democracy in Switzerland". *Economic Policy, 30*(81), 141-181.

Gagliarducci, S., Paserman, M. D., et Patacchini, E. (2019). "Hurricanes, climate change policies and electoral accountability" (No. w25835). National Bureau of Economic Research.

Karakas, L. D., et Mitra, D. (2020). "Believers vs. deniers: Climate change and environmental policy polarization". *European Journal of Political Economy*, 65, 101948.

Liao, Y., et Junco, P. R. (2022). "Extreme weather and the politics of climate change: A study of campaign finance and elections". *Journal of Environmental Economics and Management*, 111, 102550.

Lim, S. L., et Bentley, P. J. (2022). "Opinion amplification causes extreme polarization in social networks". *Scientific Reports*, 12(1), 18131.

Lindvall, D. (2021). Democracy and the challenge of climate change. International IDEA Discussion Paper 3/2021.

Mavisakalyan, A., et Tarverdi, Y. (2019). "Gender and climate change: Do female parliamentarians make a difference?". *European Journal of Political Economy*, 56, 151-164.

Mildenberger, M., et Tingley, D. (2019). "Beliefs about climate beliefs: the importance of second-order opinions for climate politics". *British Journal of Political Science*, 49(4), 1279-1307.

Nordhaus, W. (2015). "Climate clubs: Overcoming free-riding in international climate policy". *American Economic Review*, 105(4), 1339-1370.

Nordhaus, W. (2019). "Climate change: The ultimate challenge for economics". *American Economic Review*, 109(6), 1991-2014.

Ritchie, H. (2024). "More people care about climate change than you think" Published online at OurWorldinData.org. Retrieved from: 'https://ourworldindata.org/climate-change-support' [Online Resource].

Sparkman, G., Geiger, N., et Weber, E. U. (2022). "Americans experience a false social reality by underestimating popular climate policy support by nearly half". *Nature Communications*, 13(1), 4779.

Vlasceanu, M., Doell, K. C., Bak-Coleman, J. B., Todorova, B., Berkebile-Weinberg, M. M., Grayson, S. J., et Lutz, A. E. (2024). "Addressing climate change with behavioral science: A global intervention tournament in 63 countries". *Science Advances*, 10(6), eadj5778.

ASSESSMENT

- Assessment will be based on an **oral presentation**:

  Students will propose two research papers of their choice to the instructors: one related to the first part of the course and the other to the second part. After the instructors have approved the selected papers, students will prepare two 10-minute oral presentations — one per article. Each presentation should include a summary of the article (50%) and a structured critical commentary in the style of a referee report (50%). On the exam day, the instructors will randomly select one of the two papers for the student to present, **without prior notice**.

  Please note: papers must be selected from the reading list and approved in advance by the instructors.

References on how to write a referee report in Economics:

Jonathan B. Berk, Campbell R. Harvey and David Hirshleifer (2015) **"Preparing a Referee Report: Guidelines and Perspectives"**

Jonathan B. Berk, Campbell R. Harvey, and David Hirshleifer (2017) "**How to Write an Effective Referee Report and Improve the Scientific Review Process**," *Journal of Economic Perspectives,* Volume 31, Number 1, Winter, Pages 231–244.

Andrea Passalacqua (2019) **"Guidelines to Write a Referee Report"**

Writing Referee Reports

***Econometrica* Guidelines for Referees**

EXAMINATION RULES

https://www.cyu.fr/formation/trouver-sa-formation/organisation-des-etudes/modalites-de-controle-de-connaissances

INVITED SPEAKERS (Attendance is mandatory)

September 23 1:15 - 2:45PM CHEMIR 106	Cristina PEÑASCO (Banque de France) - *in English*
September 30 2:30 - 4:30PM CHEMIR 106	Guillaume QUEVAREC (Agglomeration Cergy Pontoise) - *en français*