RAIS RESEARCH ASSOCIATION for INTERDISCIPLINARY STUDIES
NOV. 2018

DOI: 10.5281/zenodo.1568798

Climate Wealth of Nations

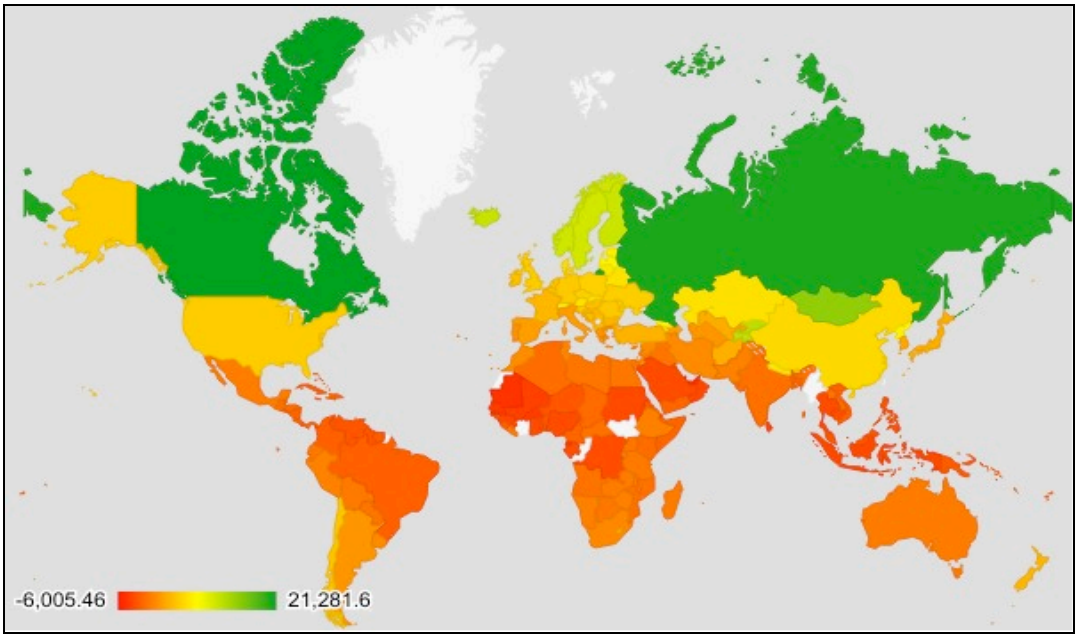
Julia M. Puaschunder

The New School, Department of Economics, Schwartz Center for Economic Policy Analysis, New York, NY, USA
Julia.Puaschunder@newschool.edu, http://juliampuaschunder.com/
Columbia University, Graduate School of Arts and Sciences, New York, NY, USA
Julia.Puaschunder@columbia.edu, http://blogs.cuit.columbia.edu/jmp2265/
Princeton University, Julia.Puaschunder@princeton.edu
George Washington University, CIBER Center for International Business Education and Research, Washington, DC
jpuaschunder@gwu.edu, https://blogs.gwu.edu/jpuaschunder/climate-gains-losses/

ABSTRACT: A 3-dimensional climate justice approach introduces to share the benefits and burden of climate change in an economically efficient, legally equitable and practically feasible way around the globe. **Climate justice within a country** pays tribute to low and high-income households carrying the same burden proportional to their dispensable income through consumption tax, progressive carbon taxation and a corporate inheritance tax. **Climate change burden sharing between countries** ensures those countries benefiting more from a warmer environment bear higher responsibility regarding climate change mitigation and adaptation. **Climate justice over time** is proposed by an innovative bonds climate change burden sharing strategy (Puaschunder, 2018, forthcoming).

KEYWORDS: Adaptation, Climate Bonds, Climate Justice, Climate Wealth of Nations, Climate Finance, Fairness, Inheritance Tax, Intergenerational Responsibility, International Law, Mitigation, Progressive Tax

Theory. Climate change winners and losers around the world: Based on the cardinal temperatures for the Gross Domestic Product (GDP) pillars of agriculture, industry and service sector productivity, the average temperature per country around the world as well as climate projections of the year 2100 under a business as usual path, the world will macro-economically benefit more from climate change until 2100 than lose (Puaschunder, 2016a, b, c, d). Graph 1 holds Climate Change Winners (**Green** & **Yellow**) and Losers (**Orange** & **Red**) until 2100 around the world. **Green countries** are those with most time ahead until reaching a GDP production peak condition by climate, **yellow countries** have some time ahead. **Orange** and **red countries** will have run out of time by 2100 for GDP production peak. Winning and losing from a warming earth is significantly positively correlated with the Paris COP 21 emissions country percentage of Greenhouse Gas (GHG) for ratification, leading to the conclusion that the countries with the longest time horizon regarding a warming earth lack motivation to mitigate global climate change. Detected climate-induced migration streams and financial flows manifest that some parts of the world will be gaining from a warming earth and some are vanishingly melting.



Graph 1: Climate change winners and losers around the world

Study 1: Results

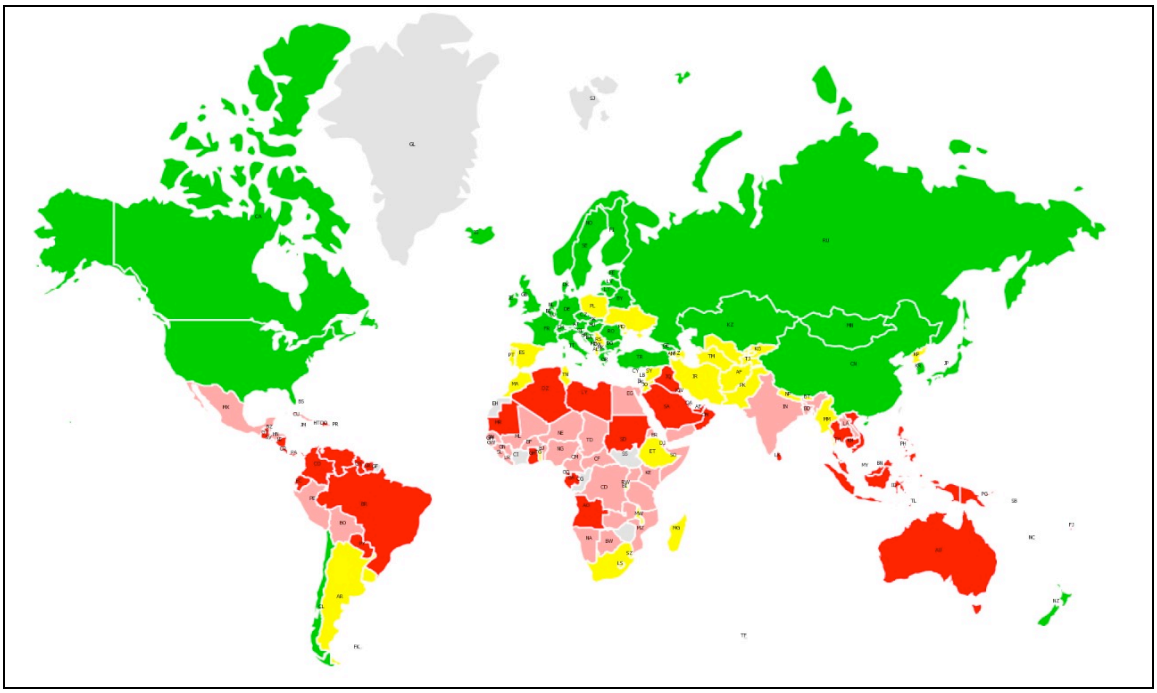
Based on a 187 country-strong dataset and under the implicit assumption of an open economy, a significantly positive inflow of migrants was found into the climate change winner countries. A statistically significant correlation outlines a positive Foreign Direct Investment (FDI) inflow into the winning countries. No significant remittances flow to climate change loser countries is reported. The results underline climate change benefits transfers needs to offset the losses incurred in the global warming-burdened areas of the world and demand for a recognition of climate refugees under the Geneva Convention.

Discussion and Implications

Tax-and-bonds transfer strategy A bonds-and-tax climate finance strategy bears the burden of climate in a right, just and fair way within society, around the globe and over time (Puaschunder 2017a, b, c). In **climate change winner countries weighted by GDP per capita** (graph 2 **Green** & **Yellow**), **taxation** should become the main climate stability financialization strategy. Foremost, the **industries winning from a warming climate** should be **taxed**. Regarding concrete climate taxation strategies, a carbon tax on top of the existing tax system should be used to reduce the burden of climate change and encourage economic growth through subsidies. Within a country, high and low income households should face the same burden of climate stabilization adjusted for their disposable income. Finding the optimum balance between consumption tax adjusted for disposable income through a progressive tax scheme will foster tax compliance in the sustainability domain.

Governments in **global warming loser countries weighted by GDP per capita** (graph 2 **Orange** & **Red**) should receive **tax transfers in the present from the winning countries**. The climate change loser countries should also **borrow by loans or issuing of bonds** to be paid back by future generations. Taxing future generations is justified as future generations avoid higher costs of climate change long-term damages and environmental irreversible lock-ins. Overall this tax-and-transfer mitigation policy thus appears as a Pareto-improving fair solution across the world and among different generations.

Tax-and-bonds transfers could be used to subsidize industry actors for choosing clean energy in order to shift the general race-to-the-bottom price cutting behavior to a race-to-the-top hunt for subsidies going into clean energy.

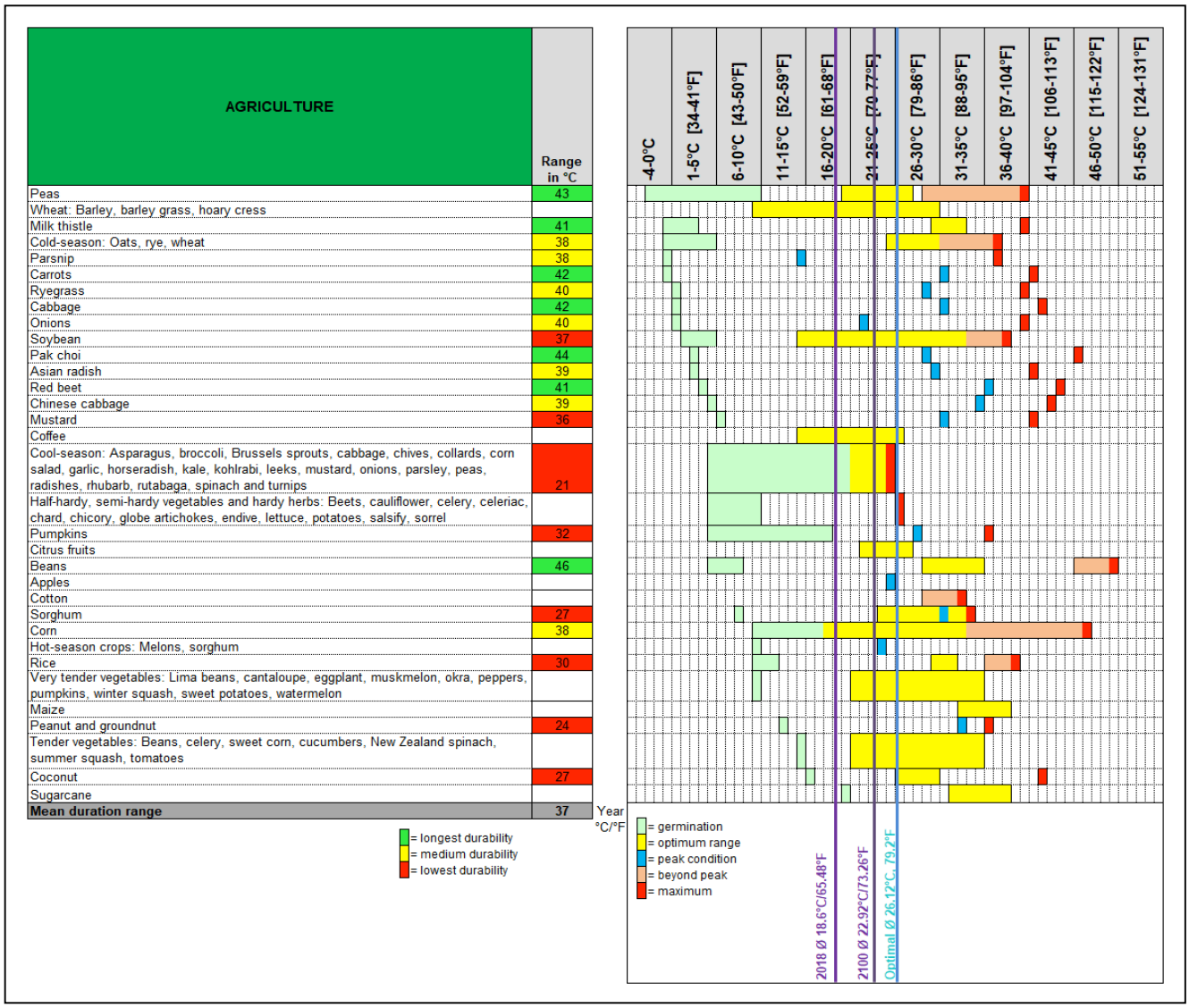


Graph 2: Climate change tax-and-bonds transfers strategies around the world

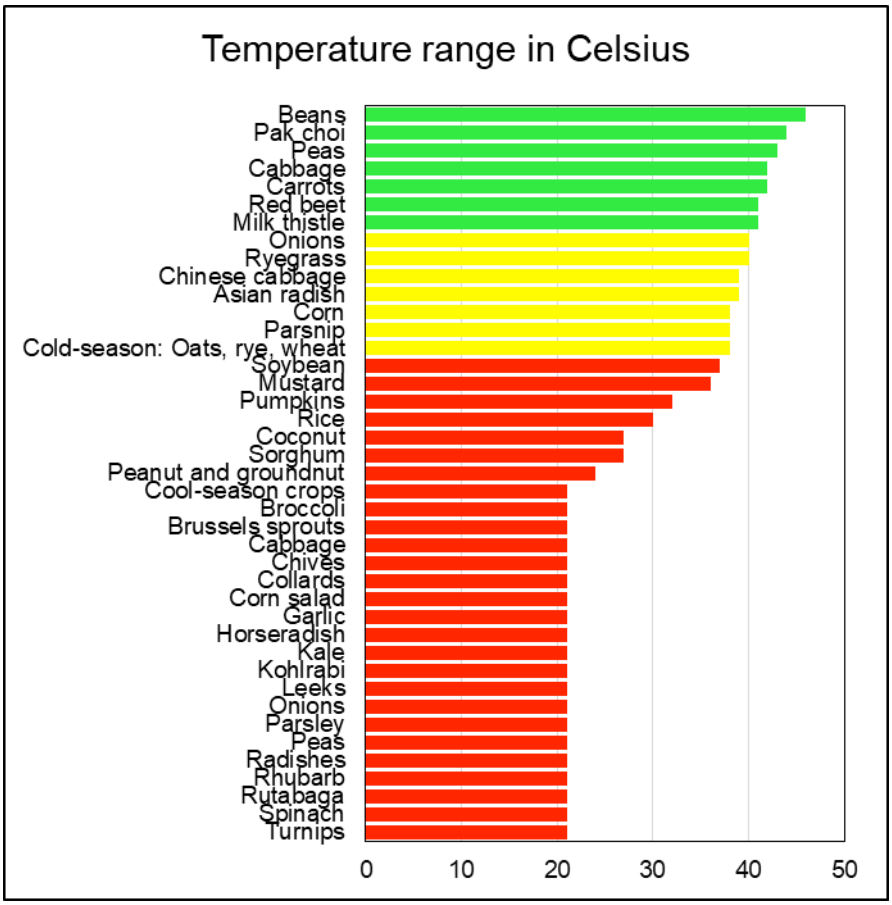
Concluding, climate change winning countries are advised to use taxation of the gains in sectors to raise revenues to offset the losses incurred by climate change. Climate change losers should issue bonds to be paid back by taxing future generations. Climate justice within a country should also pay tribute to the fact that low- and high income households share the same burden proportional to their dispensable income, for instance enabled through a progressive carbon taxation. Those who caused climate change could be regulated to bear a higher cost through carbon tax in combination with retroactive billing through a corporate inheritance tax to reap benefits from past wealth accumulation that contributed to global warming.

Study 2: Results

Climate change winning industries and economic sectors around the world: With rising temperature, economically there may be a **shift from industry** production with lowest optimum temperature **to service sector** activities with medium peak cardinal temperature and then **agriculture sector productivity** (see graph 3 and graph 4 below) with the highest optimum temperature. The peak temperature time for plant seed growth is still ahead, subjective well-being based on temperature is either currently prevalent or has passed. Heat waste production is prospected to become a luxury good in the future; as well all winter sports related activities. When it comes to safety, Legionella bacteria in the water will soon become a problem and medical and hygiene markets that combat these risks will likely prosper soon.



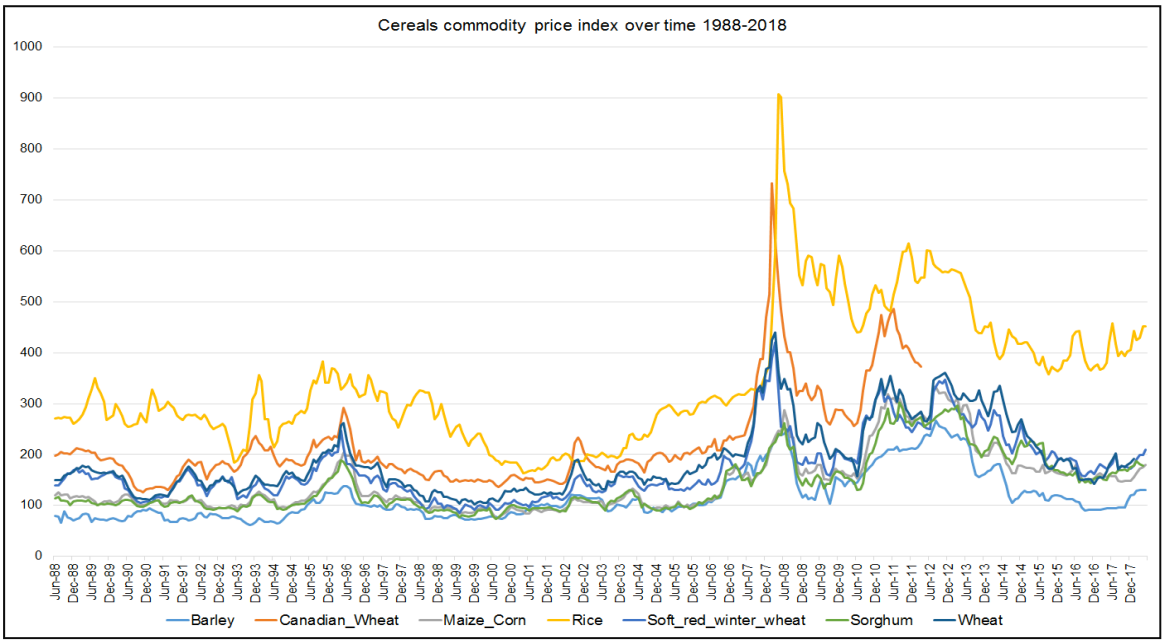
Graph 3: Agriculture climate-related peak condition



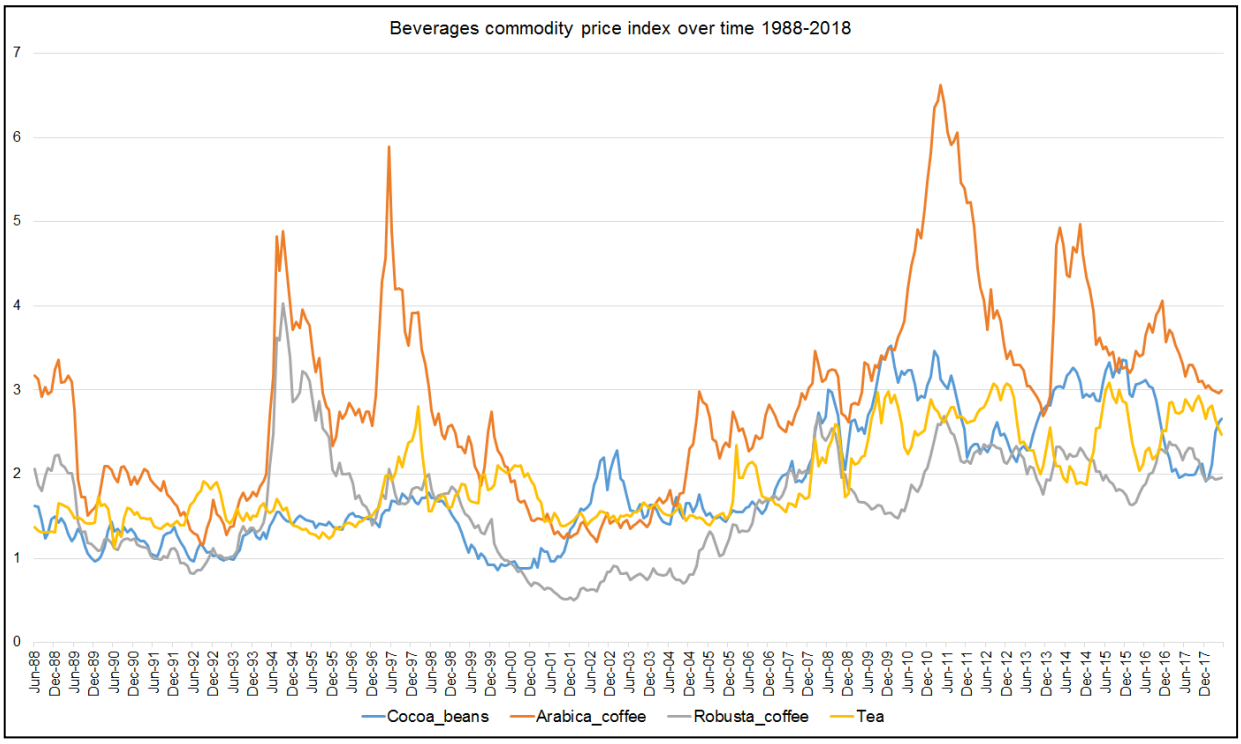
Graph 4: Agriculture climate-related peak condition per crop

Discussion and Implications

Contemporary attention to global warming is assumed to affect commodity and beverage prices hyperbolically at extinction (see graphs 5 and 6).



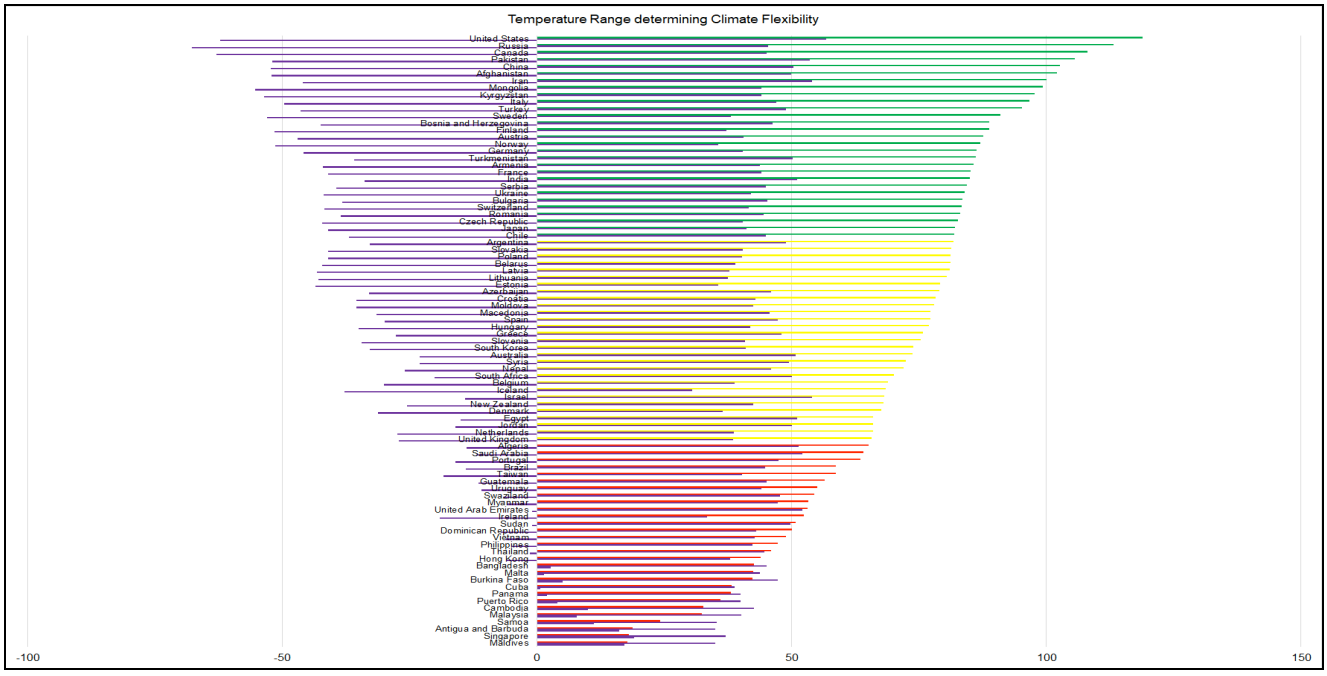
Graph 5: Cereals commodity price index over 1988-2018



Graph 6: Beverage commodity price index over 1988-2018

Conclusion

The paper concludes with a proposal of Future Climate Wealth of Nations being grounded in climate flexibility defined as range of temperature variation of a country. Climate change requires nations' temperature flexibility for economic production. The more climate variation, the more degrees of freedom in temperature variability a country can offer. Already now human capital inflows are reported into climate flexible territories.



Graph 7: Climate flexibility by country

References

Puaschunder, J.M. 2016a. "Intergenerational climate change burden sharing: An economics of climate stability research agenda proposal." *Global Journal of Management and Business Research: Economics and Commerce 16* (3): 31-38.

Puaschunder, J.M. 2016b. *Mapping Climate Justice*. Proceedings of the 2016 Young Scientists Summer Program Conference, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria.

Puaschunder, J.M. 2016c. "On eternal equity in the fin-de-millénaire: Rethinking capitalism for intergenerational justice." *Journal of Leadership, Accountability and Ethics 13* (2): 11-24.

Puaschunder, J.M. 2016d. The call for global responsible intergenerational leadership in the corporate world: The quest for an integration of intergenerational equity in contemporary Corporate Social Responsibility (CSR) models. In D. Jamali (Ed.), *Comparative Perspectives in Global Corporate Social Responsibility*, pp. 275-288. Hershey, PA: IGI Global Advances in Business Strategy and Competitive Advantage Book Series.

Puaschunder, J.M. 2017a. "Climate in the 21st century: A macroeconomic model of fair global warming benefits distribution to grant climate justice around the world and over time." *Proceedings of the 8th International RAIS Conference on Social Sciences and Humanities* organized by Research Association for Interdisciplinary Studies (RAIS) at Georgetown University, Washington, D.C., United States, March 26-27, pp. 205-243.

Puaschunder, J. M. 2017b. "Mapping Climate in the 21st Century." *Development 59* (3) :211-216.

Puaschunder, J.M. 2017c. "The climatorial imperative." *Agriculture Research and Technology 7* (4): 1-2.

Puaschunder, J.M. 2018. Intergenerational responsibility in the 21st century. Wilmington, DE: Vernon.

Puaschunder, J.M. (forthcoming). *Governance and climate justice: Global South and developing nations*. Cham, Switzerland: Springer Nature, Palgrave Macmillian.