

# Exploring Allocation Schemes for Distributing Global Climate Mitigation and Adaptation Funds



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## Abstract

The adverse effects of climate change are upon us and have been for some time. While we should continue to mitigate them through means of carbon dioxide emission reduction, we need to begin to think about the implementation of adaptation measures. Countries around the world are being disproportionately impacted by severe weather events and water shortages; some will require more assistance than others with how to proceed with their mitigation and adaptation plans. The purpose of this project is to explore how we as a global community should allocate financial responsibility for climate change mitigation and adaptation. Three possible allocation schemes will be presented, each embodying a different principle of distributive justice; utilitarian, egalitarian, and Rawlsian.

I will conduct a survey that will first ask questions about everyday situations, and then specifically about scenarios pertaining to climate change. Each answer will be mapped to a principle of distributive justice. I will examine the results to see how people's preferences change when the scenarios are climate change specific.

I aim to explore if there is a specific principle of justice people prefer overall, and specifically in reference to climate change. I expect that there will be a trend where similar respondents favor similar principles of justice. If the world were going to come together tomorrow and decided to act, I would recommend whichever allocation scheme ended up being the most favored.

## Results

### Union Community (n = 86)

There were no statistically significant relationships when the regressions were run for each individual principle. When the regressions were run to include all three principles, there were multiple significant relationships.

Union Rawlsian Plus Others Linear regression				Union Utilitarian Plus Others Linear regression				Union Egalitarian Plus Others Linear regression					
<u>rawlsiancc</u>	Coef.	St.Err.	t-value	<u>utilitariancc</u>	Coef.	St.Err.	t-value	p-value	<u>egalitariancc</u>	Coef.	St.Err.	t-value	p-value
<u>rawlsiangeneral</u>	.031	.127	0.24	<u>utilitriangeneral</u>	-.088	.11	-0.80	.429	<u>egalitriangeneral</u>	.075	.098	0.76	.449
<u>utilitriangeneral</u>	.191	.117	1.62	<u>rawlsiangeneral</u>	0	.12	-0.00	.999	<u>rawlsiangeneral</u>	.038	.103	0.37	.714
<u>egalitriangeneral</u>	.227	.121	1.88	<u>egalitriangeneral</u>	-.047	.114	-0.42	.678	<u>utilitriangeneral</u>	.119	.095	1.26	.213

### Amazon's Mechanical Turk Community (n = 401)

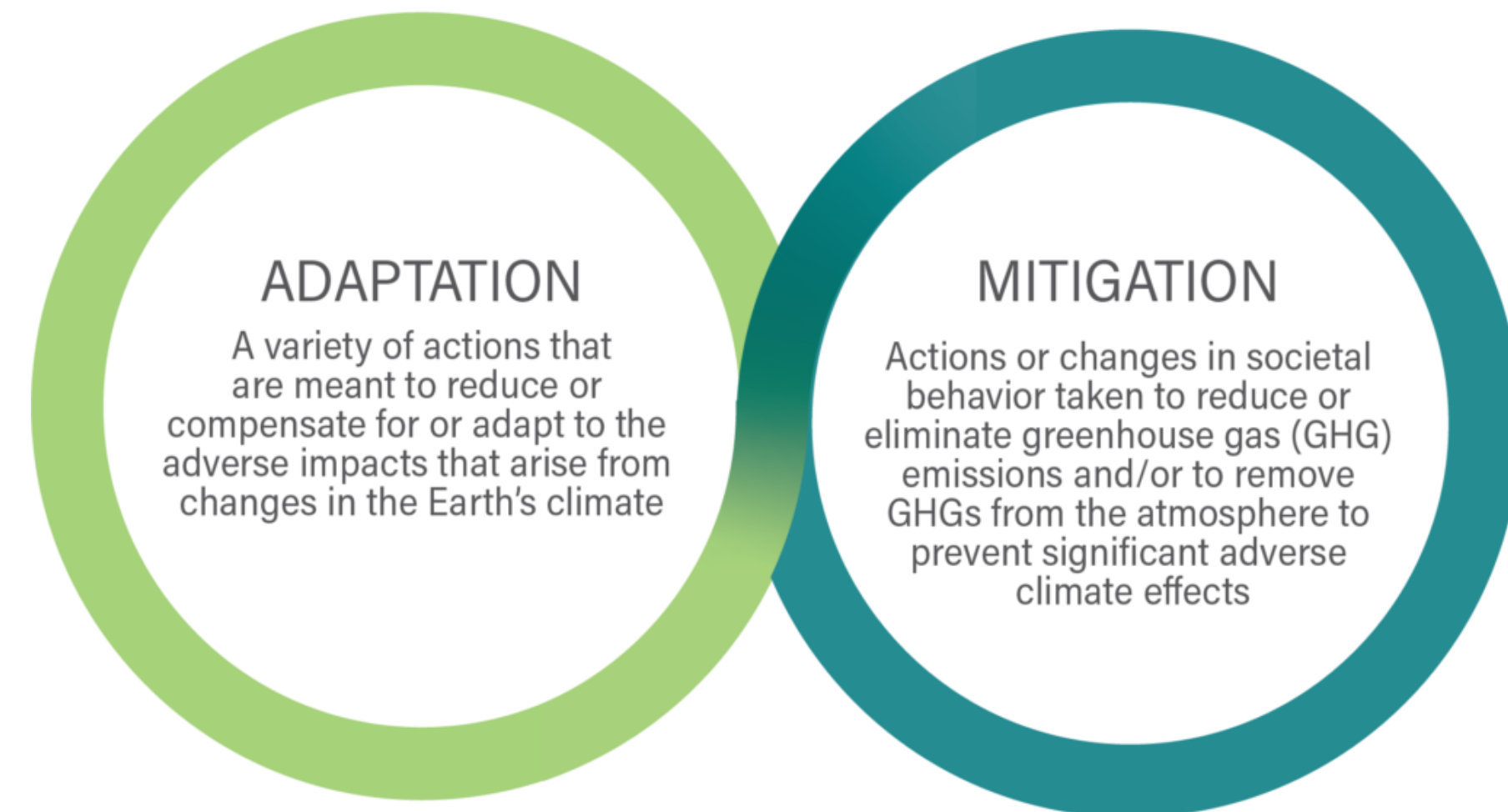
All the regressions were statistically significant for the individual principles.

When the regressions were run to include all three principles, there were multiple significant relationships.

Mechanical Turk Rawlsian Plus Others Linear regression				Mechanical Turk Utilitarian Plus Others Linear regression				Mechanical Turk Egalitarian Plus Others Linear regression						
<u>rawlsiancc</u>	Coef.	St.Err.	t-value	p-value	<u>utilitariancc</u>	Coef.	St.Err.	t-value	p-value	<u>egalitariancc</u>	Coef.	St.Err.	t-value	p-value
<u>rawlsiangeneral</u>	.203	.047	4.28	0	<u>utilitriangeneral</u>	.334	.052	6.41	0	<u>egalitriangeneral</u>	.29	.052	5.58	0
<u>utilitriangeneral</u>	.059	.053	1.12	.263	<u>rawlsiangeneral</u>	.364	.047	7.75	0	<u>rawlsiangeneral</u>	.021	.045	0.47	.641
<u>egalitriangeneral</u>	.247	.055	4.47	0	<u>egalitriangeneral</u>	.094	.055	1.72	.086	<u>utilitriangeneral</u>	.18	.049	3.65	0

## Survey Question #2 CC Section

Countries with the greatest financial resources should bear a greater financial responsibility for financing climate change rather than letting every country fend for themselves.



## Survey Question #4 General Section

Inequalities due to personal responsibilities do not have to be equalized. Ex: If you party instead of studying you are not owed the same grade as your peer that studied.

## Survey Question #4 CC Section

Finances for climate change mitigation and adaptation should be collected from countries with the greatest financial resources rather than those who emit the most carbon dioxide, because high carbon dioxide emissions do not necessarily equate to a high gross domestic product (GDP).

## Economic Theory and Philosophy

### Utilitarian

- Believes that whatever maximizes utility, or well-being, is a good thing
- Cares about motivations and current information while making decisions
- Allocation scheme will revolve around obtaining money from the richest countries who will feel the least impact from the loss, and to redistribute it to those who would get the most utility out of it
  - Some developing countries only require tens of millions of dollars which is nothing to a country like the United States
  - Poorer countries would gain more than the United States is losing

### Egalitarian

- Believes that everyone's welfare should count equally and strives to make such equality happen
- Find the thing that is the cause of inequality and equalize it
- About seeking out who is worse off and attempting to provide them with equal opportunity so that they may step onto the same playing field
- Focus on the developing countries who are suffering the most from climate change and fulfill their adaptation needs before considering the developed countries.
  - Money should first be put towards those who need the financial resources to protect themselves in the form of adaptation infrastructure

### Rawlsian

- To maximize the well-being of the least well-off, without an emphasis on equality
- Would let inequality stand if it benefited the least well-off in society
- Need overlapping consensus, parties involved need to search for cooperation that is acceptable to everyone
  - Focus on setting up policy that benefits the next generations
    - Works to make sure that those who are the worse-off now will not be the worse-off forever
    - Mitigation and adaptation measures; infrastructure, education and the helping of poor nations economies would be beneficial uses of the allocated finances, helping to set them up so that they can better help themselves in the future



## Conclusion

This thesis attempted to determine patterns in the way people think. The findings show that people do not necessarily subscribe to one principle of distributive justice repeatedly. People are flexible and cannot always be categorized into groups. Framing scenarios differently can cause people to think about them differently. It was the hope that a policy recommendation based on the most favored principle of distributive justice could be presented, but the human mind does not seem to be that black and white. Rather than providing a solution to make decision making easier, we learn one of the reasons it is so difficult in the first place.

Examining principles of distributive justice can still help us to determine how climate change mitigation and adaptation funds should be collected and allocated. An allocation scheme does not have to necessarily subscribe to a particular principle, but the idea was that it would be easier to get people to agree to the most favored on. It could be a positive that allocation schemes do not subscribe to a particular principle. If an allocation scheme worked to make those that are the worst-off better than they were before, provided equal opportunity, and provided better to the most amount of people, then it would encompass every principle.

Both economic efficiency and social equity should continue to be at the forefront of decision makers' minds. It will benefit far more people if the two are considered together. We tend to lean one way or the other, favoring economics or wellbeing, but they should not be so mutually exclusive. We can work as a society on this planet towards solutions that do not hurt the economy but that prioritize the well being of humans and the environment. People from every discipline need to work together and consider every angle of the issue of climate change.

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