

The Global Climate Change Game

Introduction The Global Climate Change Game highlights key challenges facing international climate change negotiations, the original inspiration for its development being the Copenhagen Summit. It combines standard public good and trust games, giving them an ultimatum twist. The game starts by highlighting the incentive for countries to free-ride on investing in a global public good and then enables students to consider how far this can be overcome over time and through negotiation. Initial piloting was conducted as part of an intermediate undergraduate development economics course.

Context Copenhagen may be history but climate change is and will remain one of the world's most pressing issues. The basic prisoner's dilemma game should be the starting point, not the end point of students' thinking about this issue. Details of how climate related costs can be financed (e.g. through carbon trading) are also better considered after students have a clear understanding of the underlying ethical and political problems they are intended to address. The game is an engaging way of doing this that is also relevant to other global public goods: international research, disease control, peace-keeping and poverty reduction, for example. It can also be adapted and extended in different ways.

How it works Students are divided into eight groups, and each group is allocated an Annex 1 (high income) or Annex 2 (low income) country. Over 5 rounds, countries attempt to maximize their individual benefit, subject to the additional constraint of avoiding global catastrophe. They do this by deciding how much money to contribute to a global 'green spending' fund, necessary to avoid global climate catastrophe. To open up the possibility of Pareto efficient green transfers, green spend is more effective in Annex 2 countries than Annex 1 ones. However, such transfers are subject to uncertainty over whether recipients will use them to add to their own green spend. The game can be adapted in numerous ways: by changing the time-frame or target; making green transfers compulsory for Annex 1 countries; and by specifying starting incomes for example.

Learning outcomes The game illustrates problems associated with the financing of public goods, and the importance of trust, providing students with insight and experience from which they can base their discussion. The range of topics include the prisoner's dilemma, principle-agent problems, additionality arising from transfers, as well as political and ethical issues including the concept of carbon debts and the effect of ultimatums on game outcomes. The game not only allows students to develop their understanding of climate change and public goods but also their skills in team working, negotiation and cooperation.

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