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**SIDE PAYMENTS AND INTERNATIONAL COOPERATION  
IN A REGIONALISED INTEGRATED ASSESSMENT  
MODEL FOR CLIMATE CHANGE**

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## **Abstract**

Human induced climate change is a global concern but climate impacts and possibilities for greenhouse gases (GHG) emissions reductions exhibit strong regional contrasts. This paper presents a modified version of the economic-climatic RICE model that computes regional temperature changes and discusses the impact of this regionalisation with respect to simulations using the global temperature trend only.

Financial transfers between countries are a possible mechanism to sustain a binding emission reduction international treaty. With respect to other contributions, this study reevaluates the possible gains from a voluntary worldwide coalitionally stable agreement on GHG emissions reductions in the context of a more refined division (in 13 regions) of the world.

The improved geographical representation highlights some contrasted interests to cooperate between countries otherwise aggregated in the “Rest of the World”. The regional temperature change representation allows for more emission reductions in all scenarios as greater regional damages appear. In terms of transfers and welfare, the overall picture remains similar to previous results published with this model but greater contrasts appear between the regions considered.