

The impact of altruism on international environmental agreement with full participation: Repeated game model

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Running title: Altruism's impact on IEA with repeated game

Abstract

This study provides a new condition for a full-participation international environmental agreement (IEA) in case that each country has impartial altruistic preference, i.e. cares about other countries' net benefits from abatement of transboundary pollutants in repeated game framework. In reduced-stage game framework, a full participation can be achieved under impartial altruism, but only for higher altruism to the extent that a solo abatement by country is profitable. We show that a full-participation IEA is achieved even if low impartial altruism such that each signatory has incentive for a deviation, by using a repeated game. Additionally, the altruism decreases the lower bound of discount factor to sustain condition of a weakly renegotiation-proof (WRP) equilibrium. Our main results show that altruism is a key factor in facilitating a full-participation in IEA as WRP.

Keywords: international environmental agreements; weakly renegotiation-proof; altruism; inequality aversion

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