

# Income sharing for common pool resources with uncertain productivity

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## Abstract

We address the interconnected issues of externalities in the use of a natural common-pool resource system and adverse effects of environmental uncertainty on risk-averse resource users. We set up a simple, analytical model, and derive conditions such that insurance by means of an income sharing mechanism mitigates externalities, and hence achieves a socially optimal outcome. For this to materialize, we show that the sharing rule must be sufficiently sensitive to individual contributions, and specifically show that a simple, proportional sharing rule can provide incentives for both efficient contributions to the income pool and efficient use of the resource system.

**Keywords** : Resource Economics | Informal Insurance | Risk Aversion | Diffusion Externalities | Cooperation

**JEL Codes** : Q2; D81; H2; H4