**Sequential sharing of a resource: an experimental investigation**
AUTHORS: Stefan Ambec, Giuseppe Attanasi and Arnaud Reynaud TSE (LERNA-INRA)

ABSTRACT: We design an experiment based on a sequential common-pool resource extraction game with side-payments. Two players share a common resource sequentially. Each player is endowed with a production function transforming units of the resource into wealth. The production function is linear with diminishing return above a threshold. The first mover decides how much to extract and, therefore, how much to leave to the other player. The latter
might decide to transfer part of his production to the former. In this set-up, from a theoretical point of view, we define several "natural solutions" related to different concepts of fairness and efficiency. Our experimental design is aimed at analyzing which of the "natural solutions" emerge in the strategic form and in the repeated version of the sequential common-pool resource extraction game. We find that efficiency can be achieved under specific fair compensation schemes, when the second mover has a technological advantage and the game is repeatedly played within the same pair.