Determinazione di strategie nello sfruttamento di una risorsa rinnovabile

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Abstract

In this paper we propose a static model describing the commercial exploitation of a common property renewable resource by a population of agents. Players can cooperate or compete; cooperators maximize the utility of their group while defectors maximize their own profit.
The model provide for one utility function which can be used for every kind of player.
Agents aren't assumed to be divided into the two groups from the beginning; by solving the static game we obtained the best response function of i-th player without making other agents positions. Then, the Nash equilibria we calculated point out how different strategies - all the players cooperate, all the players compete or players can be divided into cooperators and defectors - can coexist.
In any case we have analyzed, it's possible to observe how the total harvest depend on renewable resource stock, and how it influences agents' positions.

Keywords Resource Exploitation, Game theory.

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