BEEKEEP CALM AND THINK IN COMMON: A GAME FOR THE GOVERNANCE OF FLORAL RESOURCES USE AMONG BEEKEEPERS

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Bees play a key role in providing ecosystem services such as pollination. However, recent ecological studies suggest that honey bee colonies introduction compete with wild bees. Exploitative competition for floral resources reveals antagonism between ecosystem services provided by honey bees – i.e. pollination, honey production – and those provided by wild bees – pollination and existence value of wild pollinators. In natural areas, beekeeping practices are seen as a source of ecosystem disservices that raised tensions over the shared harvesting of floral resources.

While existing studies have focused on ecological aspects of competition for floral resources, the present study explores floral resources management governance in a socio-ecological perspective. To this end, we draw on a conceptual framework combining collective action theories on common-pool resources management and the concept of ecosystem services. We applied this framework to analyze the social interdependencies among beekeepers within the area of Cévennes National Park, southern France. To turn it into action, and accompany new forms of floral resources governance, we adopted a companion modeling approach (ComMod), a post-normal science methodology based on co-construction of simulation models. We built a role-playing game based on 35 beekeepers' interviews, and organized 4 gaming workshops. The gaming sessions highlighted the dilemma between individual and collective interest in harvesting resources. Despite some interactions that revealed their awareness of some kind of interdependencies over floral resources, this paradigm shift appeared cognitively dissonant for them. The high degree of uncertainty, concerning resource production and carrying capacity of the environment, are major obstacles to collective organization. It affects the actors' motivation for a collective action that seems difficult to articulate with the temporal constraints of their activity. Beyond motivation, trust towards the other actors is crucial for transparency, and identifying the right facilitators and the right decision-making arenas are critical questions. Nevertheless, some participants were willing to move towards more transparent collective organization.

Floral resource management between beekeepers appears as a textbook case of common-pool resource governance in relation to ecosystem services. Combining social and ecological aspects, we hope to contribute to the emergence of operational resource sharing solutions, stemming from the local beekeepers themselves. It appears now crucial to explore further new forms of governance of floral resources that will reconcile beekeeping and wild bees conservation, in conjunction with agriculture and land managers who largely shape these resources.