

Resource management and risk pooling: Exploring the viability of indigenous solutions for modern resource management problems

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Despite the fact that East Africa's semi-arid and savannah regions are subject to frequent, unpredictable and lengthy droughts, Maasai and other Maa-speaking pastoralists have thrived for many generations. This has been made possible not only by their understanding of the physical environment but also by their social institutions such as the osotua risk pooling relationship. Osotua relationships are imbued with respect, restraint, and a sense of great responsibility. Osotua gifts are given in response to requests that are based on real need, and they do not exceed the amount requested. Our agent-based models have shown that osotua interactions effectively pool risk among actors facing uncertainties that arise from drought and disease, leading to greater herd longevity in ecologically realistic conditions. Further, experimental work with human subjects has demonstrated that individuals behave differently when economic games are framed in terms of osotua. These facts suggest that osotua should be explored as a potential solution for other resource and risk management problems. The osotua relationship is a trusting and respectful relationship between two autonomous actors who must manage risk associated with environmental uncertainty, making it well suited to modern resource management problems including water scarcity. We are now exploring the applicability of the osotua rule to the problem of fragmented water governance in central Arizona.