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A participatory assessment of post-fire management alternatives in eastern Spain

Joan Llovet

J. Llovet (1), A. Vilagrosa (2), A. Ocampo-Melgar (3), L. Guixot (4), C. Murrias (5), A.G. Mayor (6), J.A. Alloza (2), and V.R. Vallejo (7)

(1) Joint Research Unit UA-CEAM, Department of Ecology (CEAM), University of Alicante, PO Box 99, E-03080 Alicante, Spain, joanllovetlopez@gmail.com. (2) CEAM Foundation, Paterna, Valencia, Spain. (3) Departamento de Ingeniería Hidráulica y Ambiental, Universidad Pontificia Católica de Chile, Santiago de Chile. (4) Department of Ecology, University of Alicante, Spain. (5) Department of Sociology, University of Alicante, Spain. (6) University of Wageningen, Holland. (7) Department of Plant Biology, University of Barcelona, Spain

Transformational socio-economic changes during the last decades of the 20th century led to the abandonment of mountainous areas in western Mediterranean countries (Puigdefábregas and Mendizábal, 1998). This process was accelerated in the Ayora Valley (inland Valencia province, E Spain) by a major forest fire in 1979. Restoration and management actions were implemented through the 1990's to promote the recovery of the area affected by this fire.

In 2010 these past actions were assessed using an integrated and participatory evaluation protocol (IAPro). The selected actions were shrubland regenerated after the fire (no-action); pine plantation over the shrubland; pine forest regenerated after the fire (no-action); and thinning of densely regenerated pines. The assessment involved the identification and engagement of a comprehensive and representative set of local and regional stakeholders who provided a baseline assessment, identified and prioritized essential indicators, considered data collected against those indicators, and participated in re-assessment of actions after an outranking multi-criteria decision aiding integration (MCDA) conducted by the expert team (Roy and Bertier, 1973). This process facilitated a collaborative integration of biophysical indicators (i.e. carbon sequestration, water and soil conservation, soil quality, biodiversity, fire risk and forest health) and socio-economic indicators (i.e. productive, recreational and touristic, aesthetic, and cultural values, cost of the actions, and impact on family finances). It was completed with activities for exchanging experiences and sharing knowledge with the platform of stakeholders.

Stakeholder platform suggested that fire risk was the most important indicator, followed by water conservation and soil conservation. Least important indicators were cost of actions, aesthetic value, and recreational and touristic value. Data collected on each action showed the thinned pine forest action with the lowest value on the fire risk criterion; shrubland had a fire risk three times higher, whereas pine plantation and dense pine forest showed a fire risk four times higher than thinned pine forest. Thinned pine forest showed the highest impact on family finances, as well as productive, cultural, recreational and touristic, and aesthetic values. The best value on forest health corresponded to shrubland, and the worst were the dense pine forest and thinned pine forest. Pine plantation showed the highest cost, whereas no-actions had not direct costs. The rest of indicators showed low or inexistent differences between actions. The indicator priorities combined with data collected through the MCDA integration showed that the thinning of densely regenerated pine forest action, outranked the other actions in most of the criteria. The second action was pine plantation, whereas shrubland and dense pine forest obtained the lowest assessment.

As conclusion, the participatory methodology was fundamental in understanding the impact of perceptions and stakeholders' priorities in a usually very technical and non-participatory process. Similar methodologies could enhance knowledge exchange between scientists, managers and stakeholders, while improve society-science collaboration in land management and restoration research and practice.

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References

Puigdefábregas, J. and Mendizábal, T. 1998. Perspectives on desertification: Western Mediterranean. Journal of Arid Environments 39: 209-224.

Roy, B. and Bertier, P. 1973. La méthode ELECTRE II – Une application au média-planning. In: M. Ross (editor) OR'72. North-Holland Publishing Company, Amsterdam, pp 291-302.