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LETTER TO THE EDITOR

Forest fires in Galicia (Spain): The outcome of unbalanced fire management

I have in the past analyzed the fire management practices and achievements of Galicia, Spain (Fernandes, 2004). Because Galicia was perceived as a case of success in regards to wildfire mitigation, the objective – after the disastrous fires of 2003 in Portugal – was to learn with our neighbors experience. It was thus with great interest that I went through the editorials of M. Chas Amil and the letter of L. Diaz-Balteiro. Although I share most of the views expressed in the editorials, I would like to draw the attention of the *Journal of Forest Economics* audience to some important issues that were missed.

Forest fires have traditionally constrained the development of forestry in Galicia, by hindering forest owners and the society in general of obtaining significant benefits from the investment made. The extent of the problem was such that near-elimination of forest fires was viewed as a pre-requisite for the implementation of a forest policy (Xunta de Galicia, 1992). Reorganization of the forest fire services and improved planning procedures in the beginning of the 1990s, as well as a continuous increase in fire pre-suppression and suppression expenditures – which have doubled from 1993 to 2004 (Xunta de Galicia, 1993, 2004) – have stabilized the burned area in acceptable levels until 2006. The number of ignitions has however remained alarmingly high, hence denoting failure in preventing fire occurrence. No fire management program can be economically effective when the number of fires is so unregulated. It adds that in the 1998–2002 period, 37% of the fires in Galicia were of unknown origin (WWF/Adena, 2004), which constitutes an obvious obstacle to define sound prevention strategies.

Half of the public investment co-funded by the European Union in the forest sector in Galicia during the 1990s has been committed to activities that directly or indirectly are expected to mitigate wildfires (DGCN, 2002). The emphasis was on improving or establishing forest roads and infrastructures for fire detection and fire fighting. Stand management against fire has always been a negligible component of this effort, e.g. in 2004 the area assigned to fuel treatment was restricted to just 0.6% of the total wildland surface (Xunta de Galicia, 2004). Younger, denser and more vertically continuous stands – hence more fire prone – have gained importance in the recent past, and flammability qualified as high to extreme in 84% of the forest surface in 2002 (Xunta de Galicia, 2002).

A well-known paradox (e.g. Pyne, 2001) results from fire policies that are focused in fire suppression and ignore or assign a minor role to fuel management: better wildfire statistics are paralleled by the increase of accumulated biomass and forest vulnerability to fire, setting the scene for larger and more damaging fires in the future. It is a fact that fire control technology can tackle just a small fraction of the potential intensity of a fire (Gill, 2005). In the Galician fires of 2006, the effectiveness limitations of fire fighting were further aggravated by the extent of the wildland-urban interface that diverted resources to protect houses and infrastructures. The opportunities to halt the spread of a wildfire are seriously diminished when rough topography and abundant fuel concur with extreme weather. Fuel management programs, if properly designed and implemented, reduce the severity of wildfires under any weather and increase the weather thresholds for effective fire fighting (e.g. Fernandes and Botelho, 2003). Fire suppression and fuel management are obviously two sides of the same coin. How to allocate the budget between these complementary activities in the frame of a balanced and successful fire management policy? Incoll (1994) indicates that the total price of fire management and damage caused by wildfire is minimized when the fuel management expense exceeds the cost of fire suppression by a factor of three. However, the above basic question has not received much attention in the past and requires additional research.

The fire management policy of Galicia – which in essence is not different from the policies generally adopted in Europe – has centered its attention on solutions to the fire problem that can only be effective on the short-term, no matter how sound and systematic their implementation is. To contribute to change these policies is the objective of FIRE PARADOX, an on-going integrated European fire management project (<http://www.fireparadox.org>).

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