



## Abandoned agricultural areas and the recurrence of forest fires in Portugal

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**ABSTRACT-** Recently, the transformations in the traditional land use patterns and lifestyles of the local populations led to a significant increase of abandoned agricultural areas. On one hand, this resulted in the recovery of the vegetation and the increase in the accumulated fuel in the traditional forest areas, and, on the other hand, it naturally increased the area of woodlands. In fact, beginning in the 1970s, many of these changes were verified in several southern European countries, particularly in the Mediterranean region. The rural exodus initiated in the 1960s led to a decrease in grazing and pastoral activities and the subsequent accumulation of fuels in the Portuguese woodlands. Many of these areas were transformed into spaces that were prone to large fires during the summer months due to the high levels of biomass that had accumulated throughout the years. So, in this context, in Portugal, as for the majority of the countries from the Mediterranean basin, more than 95% of the forest fires are due to human actions and/or activity. The number of occurrences is closely associated with intentional or negligent human causes, which results from different behaviors and attitudes, and, burned areas are directly related with the different weather conditions throughout the years, the lack of forest management, and, finally, to some inefficiencies in firefighting operations. However, in mountainous areas, nowadays, extensive grazing represents an irreplaceable form of recovery of difficult territories with low attractiveness and productivity. In fact, the use of fire has increased, in order to provide better feeding conditions for animals and to avoid their search of food in lowland agricultural fields. Renewal of pastures became an important motivation to promote bush fires. Some of them, due to negligence or other causes, either grow to be uncontrolled or transform themselves in forest fires, destroying forest resources. Moreover, high bush productivity of forest ecosystems creates conditions for high rates of forest fire recurrences, increasing the risk of forest fires. Indeed, the use of fire in mountain areas has increased, in an environment of large accumulation of phytomass, with high inflammability, calorific power and combustibility, creating conditions for fires to be more recurrent.

**Keywords:** Portugal; forest fires; ignitions; new fire regime; tragedy.

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