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Interactive comment on “Temporal variations and change of forest fire danger in Europe in 1960–2012” by A. Venäläinen et al.

Anonymous Referee #3

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The manuscript deals with the variation of fire danger in the Southern Europe in the last 50 years. The Authors, by using a database of past meteorological conditions, calculated the FWI index and tried to explain the variation of total burnt area during the same period in two European countries. The manuscript appeared as an interesting exercise but, in my opinion, not very original. I have one main comment related to a very “basic” requirement of these kind of researches. The main issue in correlating FWI and burnt area is the role of human activity. We know very well that, especially in southern Europe (Italy, Spain, Greece) the role of human activity is predominant in determining both the number of fires and the total burnt area. The effects and interactions of human activity with forest fires are numerous. I try to summarize the two most important. First: humans cause (directly or indirectly) most of the forest fires (80-90%). Importantly this

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influence is variable in relation to climate: when conditions are critical (very high FWI) very often people aimed at criminal actions are more tempted to act because the effect of their actions will be much severe then in "normal conditions". Thus the burnt area increases disproportionately. Second: due to higher criminal activity in the worst days the system of fire fighter can't withstand such "stressful" conditions (to many fires to control) and the effect will be, again, that the burnt area will increase much more than predicted by FWI. These two conditions are completely neglected in the manuscript (as in many other papers within the similar subject) and I couldn't find nothing except some very rough qualitative sentences like " forest fires have not necessarily followed suit, presumably due to other factors affecting them" (end of conclusion). This, in my opinion is too vague and put the manuscript within the category of "standard research on forest fires and FWI". I realize that analysing the effects of human activity on area burnt is rather difficult but, at our stage of knowledge, urges to go ahead in this direction. Otherwise one again we have to take note that the variation of FWI is not able to predict the total burnt area in a certain region. But this information is already well clear to all involved in such topics (fire fighters, fire modellers etc).

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