

## ***Interactive comment on “An overview of the recent approaches for terroir functional modelling, footprinting and zoning” by E. Vaudour et al.***

**E. Vaudour et al.**

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Firstly, we would like to thank Anonymous Referee#2 for helpful comments. We have extensively revised the paper based on his/her suggestions. The list of specific points and how we address them in the review article is below.

Anonymous referee #2: “The manuscript is an overview of existing data and modelling approaches for terroir functional modelling, footprinting and zoning at local and regional scales. The paper address relevant scientific issue within the scope of SOIL. The paper address soils within a multidisciplinary context and it is of broad international interest- The objectives are not very clear, especially it is difficult to find a correspondence between the objectives written in the abstract and the discussion. Moreover the

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relationship between the soil and the production and / or product quality is not widely explained. The paper is not concise, In my opinion some parts could be reduced.”

“The objectives are not very clear , especially it is difficult to find a correspondence between the objectives written in the abstract and the discussion.”

Our reply to that comment: Both anonymous referees share the critic that the paper is rather long and not well-organized because too many objectives are treated and that the reader would have expected to know more about relationships between soil and vine features. Possibly the critics come from the fact that relationship between soil and wine, which is at the basis of the terroir concept, is not yet fully acknowledged by the scientific consortium and must be further documented. For this reason and in order to clarify the reading of this paper, we followed the Anonymous Referee#2’s suggestion of reducing some parts of the manuscript.

How this is implemented in the revised manuscript: The manuscript was reduced to the following sections corresponding to the most original objectives highlighted by Anonymous Referee#1: 1/ New tools for assessing terroir footprints: metabolomics, metagenomic approach and microbial/chemical fingerprinting, 2/ terroir zoning at different scales: mapping terroirs and using remote and proxy sensing technologies to monitor soil quality and manage the crop system for a better food quality The last section about terroir sustainability was reduced but maintained because we considered it as a perspective deriving from the new tools developed. We added a new figure 1 in the first part (please see the attached supplement file).

Figure 1. Differences in grape surface microbial communities present between wine regions of California. From: <https://cosmosmagazine.com/earth-sciences/winemaking-art-or-science>

Anonymous referee #2: “Moreover the relationship between the soil and the production and / or product quality is not widely explained.”

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Our reply to that comment and how this is implemented in the revised manuscript: This objective was dropped as suggested by Anonymous Referee#1.

Anonymous referee #2: "The paper is not concise, In my opinion some parts could be reduced."

Our reply to that comment and how this is implemented in the revised manuscript: This is what we did: the text was significantly reduced and only parts dealing with chemical/biological footprinting then dealing with zoning were developed. A new table 2 was provided as recommended by Anonymous Referee#1 (please see the attached supplement file, page 4)

Anonymous referee #2: "The figure 1 is not significant of the increase of the importance of terroir in publications. I'm quite sure that in general the number of papers published each year is increased from 1990 to 2014. It could be more interesting to make a graph with "number of paper using terroir term/number of paper regarding viticulture"

Our reply to that comment: Figure 1 was dropped and Figure 2 maintained. We did not consider " number of paper using terroir term/number of paper regarding viticulture" as suggested because this review was not specifically focused on viticulture but also related to soil research".

How this is implemented in the revised manuscript: Figure 1 was dropped and Figure 2 maintained.

Anonymous referee #2: "The first part of page 839 is confuse"

Our reply to that comment and how this is implemented in the revised manuscript: This section was removed.

Anonymous referee #2: "Page 864 explain the acronyms"

Our reply to that comment and how this is implemented in the revised manuscript: OK acronyms were explained.

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Anonymous referee #2: "The paragraph 4. Improve The order of the paragraphs in the section 4. Regard the effect of alternative management to control erosion in Mediterranean , see Ruiz Colmenero et al., or Novara et al., (2011)"

Our reply to that comment and how this is implemented in the revised manuscript: OK Ruiz-Colmenero et al., 2011, 2013 added but we did not include that by Novara et al. (effect of vineyard abandonment on soil organic carbon dynamics) in order not to develop the third section "perspectives" excessively (as a matter of fact, Anonymous Referee#1 suggested to drop this topic, which we nevertheless maintained, as an opportunity enabled by the new zoning approaches).

Please also note the supplement to this comment:

<http://www.soil-discuss.net/1/C708/2015/soild-1-C708-2015-supplement.pdf>

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Interactive comment on SOIL Discuss., 1, 827, 2014.

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