



LIFE Project Number  
**<LIFE15 ENV/IT/000641>**

**Deliverable B1.3 "Decision tool ICT version"**

*Sub-action B1.3 – Final tool (release version)*

*Sub-action B1.4 – ICT tool*

LIFE PROJECT Soil4Wine



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## 1. Introduction

**Soil4Wine** project "*Innovative approach to soil management in viticultural landscape*" aims to achieve a better soil management in the whole viticultural system developing and testing an innovative Decision tool and management solution tested in farm in Project area and Europe.

This report presents the structure and main outcomes of sub-action B1.3 and B1.4 related to Soil4Wine project Action B.1 " Development of the decision tool ".

UCSC is the responsible for this action with the collaboration of HORTA.

Aim of this sub-action was the improvement of the Decision tool based on the feedbacks received from Sub-actions B3.4 - Living labs in the study area and Sub-action B3.5 – Living labs across Europe during which the decision tool beta version was tested and evaluated by over 60 growers and technicians.

A detailed description of the Decision tool (beta version) is present in “Deliverable B1.2 beta tool”, in this document, focus is given to the improvements made; while results of the evaluation are provided in “Deliverable B3.4\_Report on living labs in the study area and across Europe”.

## 2. Description of the improvements

### a. Definition of the site

In the first step, the farmer defines the site (e.g., a vineyard with its surroundings), for which he wants to use the decision tool, by inputting information on its characteristics (almost all are “closed choices” through drop down menus to facilitate the user). Drop down menus for “Characteristics of the site - Average slope” and “Characteristics of the vineyard - Farming practices of ploughing” were better explicated; in particular it was included the possibility to select the presence of vineyard terraces.

### b. Potential soil threats

For each site attributes a score is assigned related to the impact of the factor itself on the different soil threats. The computing engine then cumulates the different scores and provides an index of the potential risk of the different soil threats in the specific site. Scores were revised based on some feedbacks received by tester; in particular the impact of some factors on erosion and contamination were reduced because in some cases the potential risk for these two threats resulted to be too high.

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For example, in a site with average slope below 5% and both inter-row and row grassing an estimated medium-high risk (orange) for erosion was too high; in the release version in that situation estimated risk resulted to be medium-low (figure 2.1).

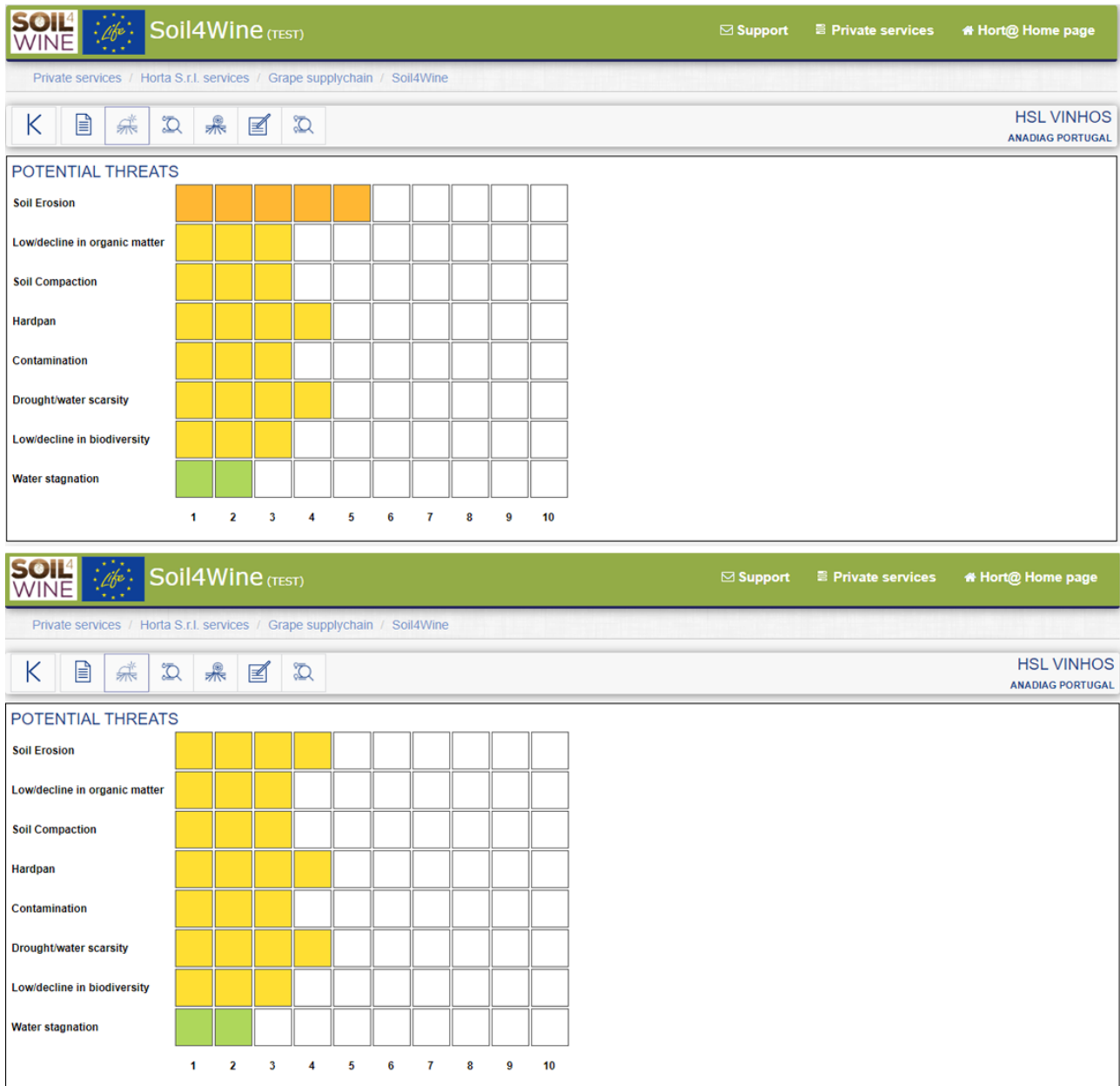


Figure 2.1 - Index of potential risk of the different soil threats for the same Crop Unit calculated by the “beta version” (above) and the “release version” (below); erosion index reduced.

Other example, in a site with number of tractor’s traffic below 15, no mineral fertilization and treatments with plant protection products below 10 an estimated medium-low risk (yellow) for contamination was too high; in the release version in that situation estimated risk resulted to be low (figure 2.2).

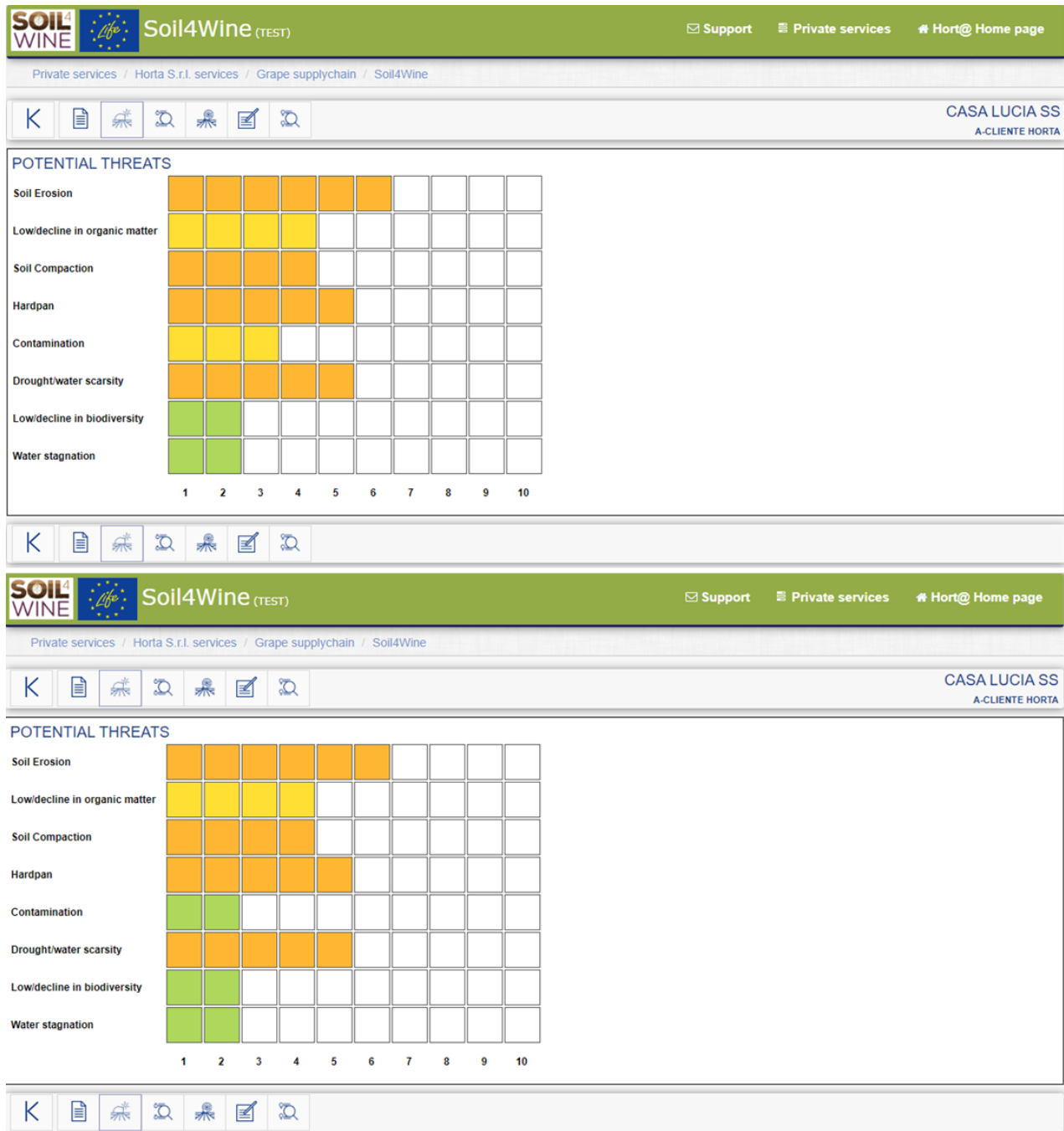


Figure 2.2 - Index of potential risk of the different soil threats for the same Crop Unit calculated by the “beta version” (above) and the “release version” (below); contamination index reduced.

### **c. Check of the potential soil threats**

Once the potential threats for a specific site are defined, the user has to check whether those threats are potential or real, by using specific indicators for each threat.

For the definition of the level of erosion there were some errors in the combination of different factors, i.e. evidence of soil erosion, soil grooves depth, vine roots and grassing coverage; these errors were corrected.

### **d. Real soil threats**

Based on the information inputted by the user about the different indicators related to the potential threats identified, the system confirms the threads and provides a list of real threats. The graphical output of this step was modified in order to be more user-friendly and easily interpretable (Figure 2.3).

Moreover, the possibility to upload documents and pictures was added, in order to be able to archive all documents used for the assessments in vineyards (Figure 2.3, lower part).

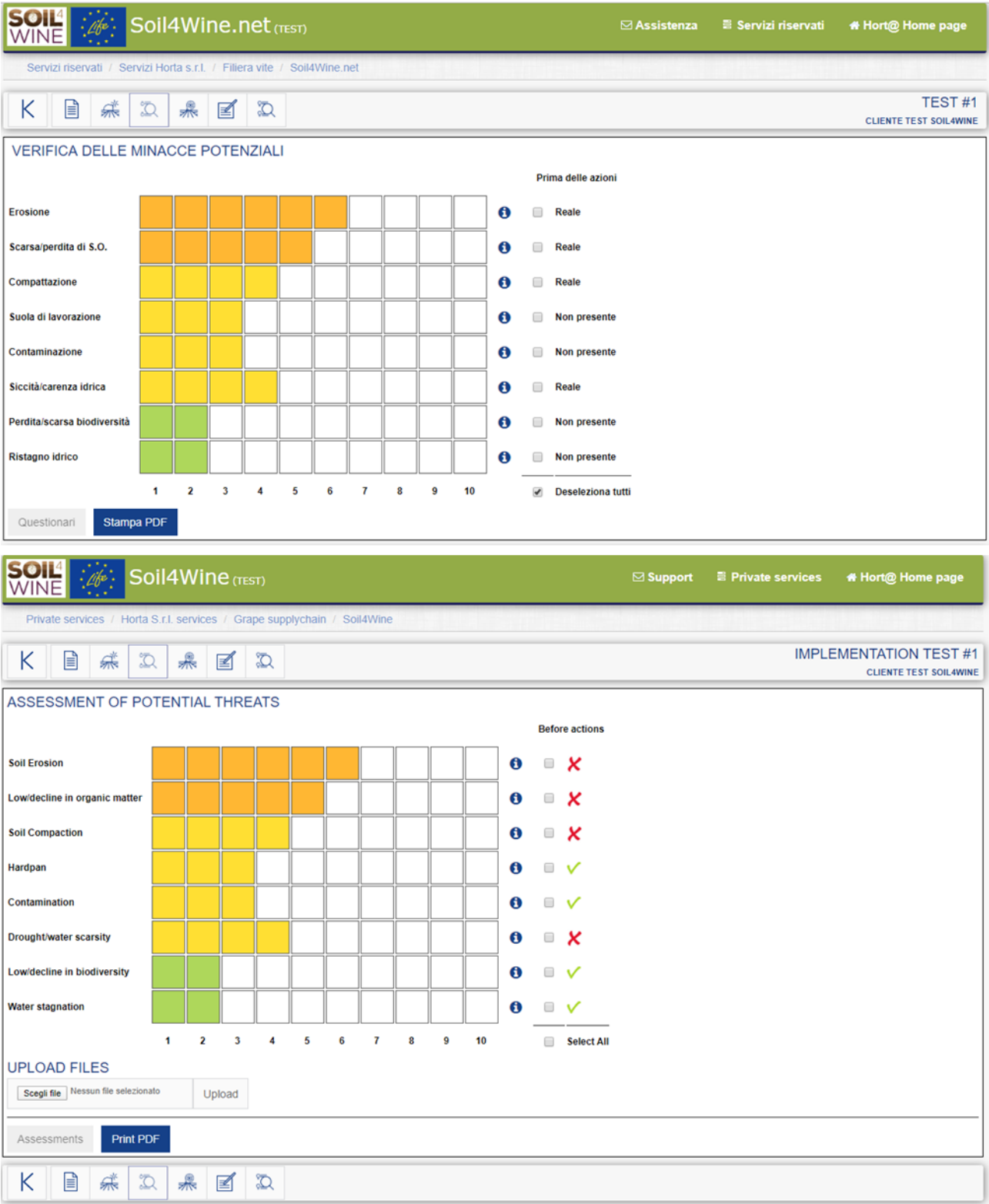




Figure 2.3 – Snapshot of the “Check of the potential soil threats” page in which threats are classified as “real” or “not present” based on the observation data inputted; graphical output of beta version above, od release version below.

### e. Possible solutions

By clicking on the icon  possible solutions for the mitigation of soil threats are showed; the same solution can be implemented for several threats, therefore the efficacy of each solution for each threat is specified. A description of each solution, and the different activities to perform in vineyard to correctly implement the solution itself, is provided as downloadable pdf by clicking the icon .

To facilitate the registration of a specific mitigation action in the “Register of soil threats mitigation actions (RAMS)”, a direct link from the table of mitigation actions and RAMS was implemented, i.e., by clicking on the name of a specific mitigation action, the first page of RAMS appears with that mitigation action pre-compiled.