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Interactive comment on “A web based spatial decision supporting system for land management and soil conservation” by F. Terribile et al.

F. Terribile et al.

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Following some short replies to the comments of the reviewers. We report firstly a general answer. Then in CAPITAL LETTERS WE REPORTED COMMENTS FROM REFEREE followed by our answers below each of the comments.

Of course we appreciated the positive feedback on some key issues of the paper (technically correct, introduction well written, a number of valid considerations, . . .), but we feel that “the specialist from Wageningen University contacted by prof. Bouma” did not understand that the paper focused on the development of a truly operational multifunctional platform (Geospatial Cybeinfrastructure) which connected standard WE-BGIS tools with simulation modelling engines and spatial inference modelling addressing soil conservation and land management. At this moment, to our knowledge (see

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literature review on the paper), similar multifunctional operational platforms simply do not exist! Then the applications reported at the end of the paper have to be considered just as examples to show how the system works in real interaction with the user and through the web. For the sake of this argument, we chose two areas (between the infinite number of areas of interest that the user can freely choose in real time) and we selected two applications (to do not mix too many applications): one for agriculture and another one for environmental issues. Anyway thanks to the “the specialist from Wageningen University contacted by prof. Bouma” we shall further clarify this issue in the revision...if we shall have the chance !

- J.BOUMA, EM.PROF SOIL SCIENCE ,WAGENINGEN UNIVERSITY, THE NETHERLANDS. THE MAJOR PART OF THIS PAPER CONSISTS OF TECHNICAL SOFTWARE DETAILS AND OPERATIONAL ASPECTS. I AM NOT IN A POSITION TO JUDGE THIS. We claimed in the paper that the conceptual framework is very important. This was not enough detected. We shall be clearer in the revision

- I ASKED A SPECIALIST FROM WAGENINGEN UNIVERSITY TO REVIEW THIS PART. HERE ARE HIS COMMENTS: “TECHNICAL IMPLEMENTATION OF THE SYSTEM IS TECHNICALLY CORRECT AND CORRESPONDS WITH WHAT IS CURRENTLY COMMON IN THE FIELD. THE USE OF POSTGIS, GEOSERVER AND OPENLAYERS C104SED 7, C104–C106, 2015 INTERACTIVE COMMENT FULL SCREEN / ESC PRINTER-FRIENDLY VERSION INTERACTIVE DISCUSSION DISCUSSION PAPER IS GOOD. THESE PACKAGES ARE CURRENTLY MOST COMMONLY USED FOR OPEN-SOURCE APPLICATIONS. THEY FIT IN WELL WITH GUIDELINES OF INSPIRE (THE EU DIRECTIVE). NOTHING BEING REPORTED IS, HOWEVER, NEW. GIS STUDENTS AT WAGENINGEN UNIVERSITY ROUTINELY USE THE TOOLS BEING MENTIONED HERE. THIS PUTS PARTICULAR EMPHASIS ON THE NEED TO PRESENT CASE STUDIES, SHOWING THE POTENTIAL OF THE METHODOLOGY, INCLUDING SCENARIO - AND SENSITIVITY ANALYSES, EVALUATION OF PRACTICAL USE BY STAKEHOLDERS ETC. ” We agree. It is very much

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true that the use of POSTGIS, GEOSERVER, OPENLAYERS is not new! That's the why they were inserted in the material and methods section. In the results session they were only quoted to frame some key results (modelling chain). It seems to us that the referee missed the main point of the paper, which is not the use of webgis tools but rather their integration with simulation modelling engines and real time spatial inference tools. All these things are reported in the results and discussion session. Then webgis tools are also present but only in the framework of the overall multidisciplinary geospatial cyberinfrastructure. In the light of these considerations we will try to better focus the point and to be clearer in the revised manuscript. Finally, just a short consideration ...we wonder " if GIS students at Wageningen university routinely use the tools being mentioned here" then we wonder why there is not one single paper on a similar system in the scientific literature?

- THE INTRODUCTION OF THE PAPER IS WELL WRITTEN AND PRESENTS A NUMBER OF VALID CONSIDERATIONS. - THE AUTHORS ALSO ILLUSTRATE THAT THE SDSS SYSTEM HAS BEEN APPLIED ALREADY IN SEVERAL STUDIES. THE AUTHORS MAY WANT TO EMPHASIZE WHAT, IF ANYTHING, IS NEW IN THEIR WORK COMPARED WITH WHAT HAS BEEN DONE ELSEWHERE. This point was stated in the introduction. For instance in the literature review at page 66 we wrote "These papers relating SDSS on agriculture and environment clearly show the importance and the rapid, positive progress of this research topic. On the other hand, we must emphasize here that most of the above contributions are somehow sectorial since they focus on a specific topic and, moreover, they do not incorporate the crucial dynamic nature of some environmental data. For instance, this is the case for their climate models, in which the daily climate variation – which is indeed a key issue in many agriculture environmental applications – is simply missing." However, we shall further clarify it.

- INCLUDING "WHAT-IF" MODELING IN AN AGRICULTURAL VERSION OF SDSS, AS SUGGESTED BY THE AUTHORS, WOULD APPEAR TO BE A GOOD IDEA.

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UNFORTUNATELY, VERY BRIEFLY DESCRIBED “APPLICATIONS” PRESENTED IN SECTIONS 3.2.1 AND 3.2.2 ON “OLIVE GROWING” AND “PROTECTION GROUND-WATER FROM POLLUTION” DON’T MEET SCIENTIFIC STANDARDS. FIGS 4, 6 AND 8 ARE UNREADABLE AND THIS MEANS THAT THE TEXT, AS PRESENTED , CANNOT BE UNDERSTOOD. THE FLOWCHARTS IN FIGS 5 AND 7 ARE UNCLEAR AS WELL. ONLY ONE OF THE LINES IS ELABORATED UPON, THE REST ENDS IN THE MIDDLE OF NOWHERE. Please see the beginning of our reply. Anyway, we did not aim to show all applications (this would confuse the reader mixing many different things) that’s the why we focus only on two examples. Moreover, this is in accordance with what has been done on other papers describing other complex geospatial platforms.

- MORE IMPORTANTLY, WHAT ARE THE QUESTIONS AND WHO IS BEING AD- DRESSED BY THE EXCERCISE? PLANNERS? LAND USERS? POLICY MAKERS? IS THE IDEA TO DEFINE THE GENERAL SUITABILITY OR POTENTIAL OF THE AREA BEING CONSIDERED FOR A GIVEN FORM OF LAND USE? AN AUTOMATED FORM OF LAND EVALUATION? OR IS ADVICE INCLUDED FOR MANAGEMENT? WHETHER OR NOT GROUNDWATER IS PROTECTED FROM POLLUTION IS, FOR EXAMPLE, VERY MUCH A MATTER OF PROPER MANAGEMENT! IS THE OVER- ALL CONCEPT THAT USE OF THE SYSTEM PRESENTED CAN BE LEFT TO LAND USERS AND PLANNERS WITHOUT ANY ASSISTANCE BY SPECIALISTS, SUCH AS SOIL SCIENTISTS? I QUESTION WHETHER THAT WOULD WORK. - STILL, A SYSTEM THAT LOGICALLY COMBINES DIFFERENT LOCATION- SPECIFIC LAND- SCAPE AND SOIL DATA INTO SPATIAL MAPS COULD BE VERY HELPFUL FOR SOIL SCIENTISTS TO ASSIST AND ADVISE LAND USERS. THIS NEEDS TO BE ELABORATED UPON AND DEMONSTRATED. THE AUTHORS HAVE TO MAKE A SERIOUS ATTEMPT TO DESCRIBE HOW THE PROPOSED SYSTEM IS GOING TO WORK, WHAT THE QUESTIONS ARE THAT ARE TO BE ANSWERED AND WHO IS BEING ADDRESSED. THIS COULD RESULT IN A VALUABLE PAPER. Of course we shall improve and reinforce this part in accordance with referee suggestions.

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AS IS, THE PAPER IS HIGHLY UNBALANCED WITH MAJOR AND ALMOST EXCLUSIVE EMPHASIS ON TECHNICAL ASPECTS WHICH ARE NOT NEW ACCORDING TO THE ABOVE COMMENTS BY A GIS EXPERT We do not agree on this issue because (i) the paper aims to show new opportunities for soil science (not only techniques) and also (ii) in the light of our answer on the first comment on GIS students at Wageningen University. Anyway – in the revision - we shall profit very much from the above referee comments to make our manuscript clearer.

In any case, we wish to thanks both referees for the time they have devoted to the manuscript.

Interactive comment on Solid Earth Discuss., 7, 661, 2015.

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7, C117–C121, 2015

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