EGUsphere, community comment CC2
https://doi.org/10.5194/egusphere-2022-307-CC2, 2022

Comment on egusphere-2022-307

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Community comment on "Transforming living labs into lighthouses: a promising policy to achieve land-related sustainable development" by Johan Bouma, EGUsphere, https://doi.org/10.5194/egusphere-2022-307-CC2, 2022

The manuscript discusses a roadmap for "Living labs" from the Mission "A Soil Deal for Europe", which can then become "Lighthouses" when thresholds are met. Thresholds are based on SDG, which are translated to measurable ecosystem services. Bouma advocates Living Labs as a way to engage various participants in a bottom-up approach that will eventually improve communication between local and regional stakeholders, farmers, the general public and the policy makers. When a Living lab satisfies the target and indicators of the SDG, a Lighthouse is established. The lighthouse then constitutes a local example from which a number of actors will get information and from which future regulations can be thought.

The main idea of Living labs and Lighthouse discussed in this paper is essential to address the rather abstract debates about SGD and to realize the goals or the EU Green Deal. There are to my opinion two problems to realize the goals of the SDG: i) some goals are expressed in terms of means (to reach the goals) instead of a regulation specifying thresholds values (as explained clearly by Bouma in the Introduction), and ii) we lack a framework to assess soil contributions to realizing the SDG, so that it is still difficult to insert soil effectively in the societal and political discourse (Wadoux et al. 2021, Challenge 10).

My main comments are about the joint learning approaches that are the core of the Living labs and Lighthouses and which I think deserve more attention. While most of my comments below are about Section 4 (Public engagement) they also relate to the other sections because the degree and quality of participation is expected to impact the outcomes of Living labs as a whole.

Overall, I think this paper is a useful contribution to the debate and to the pressing issues of realizing the SDG and the EU Green Deal.

Should we abandon the term of citizen science?

As a personal note, I do not like the term citizen science. First, should one be a citizen to participate? The obvious answer is no. Citizen is defined in the Oxford English Dictionary as "a legally recognized subject or national of a state […] having certain rights". I would rather prefer the general term of public participation or that of non-expert individual/participant. Second, citizen science is also difficult to clearly define and usually

has two meanings. It originally comes from Irwin's (1995) and was articulated around two points: i) "Science should address the needs and concerns of citizens, and seek to meet those needs" and ii) "The process of producing reliable knowledge could be developed and enacted by citizens themselves. People bring into science such things as local contextual knowledge and real-world geographic, political, and moral constraints generated outside of formal scientific institutions". Another meaning comes from the well-known work of Bonney (see the report of Bonney et al. 2009) and is perhaps the most popular today. Bonney describes citizen science as non-scientists participating by contributing to scientific data. The definition of Irwin is about democratizing science, whereas that of Bonney is about public contribution to a very narrow part of the science (data collection). To my understanding this manuscript refers to the first definition of citizen science but surprisingly in his answer to the first CC (Comment 6), Bouma refers to projects where citizens (non-experts) contribute data, which then refers to the second definition above (that of Bonney). It would be useful to the reader to clarify this point and how citizen science is defined and articulated in this manuscript.

Balancing the different expectations and outcomes

Joint learning between various participants is, in my opinion, the right way to go to address complex or "wicked" situations. It is well described in the manuscript and is essential for Living labs. The main problem with joint learning, however, is to strive the right balance between the different outcomes and expectations of the participants. In a synthesis of public participation in scientific research, Shirk et al., (2012) concluded that for addressing complex problems in environment and society, projects should generally include outcomes for science, outcomes for individuals and outcomes for socio-ecological systems. In this manuscript it is clear how the outcomes for the socio-ecological system will address the expectations (i.e. address the SDG, better policy development), but I am not so clear from reading Sections 4 and 6 about the outcomes for research and for individuals. Simply said: why would the public and scientists like to engage in living labs? What's in there for them? How to manage their expectations with respect to the potential outcomes of the Living labs?

Degree of participation

Citizen science and participation of non-experts to Living labs could describe a wide spectrum of approaches. How much power can and should the public have in the outcome? I imagine that the degree of involvement (not only of the public, but also of the scientists and farmers) will determine the expectation on the outcomes. The degree of participation is often evaluated in terms of power (see, for example, the ladder of participation) over the project in which people engage. At this point it would be interesting to define the expected degree of engagement in the joint learning phase. This would be of relevance for later assessing whether the joint learning is a success or not.

Quality of participation

The need for a bottom-up approach is acknowledged early in the manuscript (at line 94), and should be emphasized. But is it really a bottom-up approach if the participants i) do not initiate the project (Living labs) and ii) do not define themselves what are the targets and indicators to evaluate the threshold values? To my understanding a bottom-up approach means that the Livings labs are a co-creation of the farmers/public/scientists while in fact it comes from the initiative of the EU Soil Mission. Innovations in Livings labs will occur within the boundaries of a somewhat top-down approach. Shouldn't we acknowledge that?

Further, bottom-up will also be dependent of context-relevant information and of the quality of participation: credibility of the participants and trust among participants, among

others. How to ensure high-quality participation? How to ensure that the participants get their interests served, while maintaining the desired outcomes? Ample attention should be paid to the quality of participation in Living labs because this will determine many of the outcomes: such as social learning and for retaining the participants and public interest in the long term.

Policy development

I fully agree with Bouma at lines 301-304: innovative management practices are potentially more successful when environment-oriented organization are trusted. I also agree that policies are successful when the majority of people feel that the policy is right. This is in fact the basis for modern democratic systems where the majority decide. But how to deal with the various and sometimes conflicting opinions of what is right for the majority? In Section 4 the various steps of dialogue and convergence do not include any citizen until the "WE" where groups of interested citizen can come in, but only when the Living lab resulted in a Lighthouse. Isn't a bit late? So citizen can come in only at the end of the project, that is, when a Living lab is already a Lighthouse. This relates to the degree of participation that I mentioned above and the definition of citizen science. What's in there for the public?

Should we also ignore the group that does not agree no matter what is being proposed? Bouma has a strong claim on it at line 307, but to me many of the farming styles that are currently proposed originally come from agricultural styles that were for long considered as utopic, alternative, and, in any cases, very minor compared to the mainstream agricultural styles. Take the example of agroecology in France, now institutionalized and conventional but considered until the 2000s relatively restricted to few farms. See Bellon and Ollivier (2012, in French).

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