EVOKED

Newsletter 6 - February 2021

Enhancing the value of climate data - translating risk and uncertainty utilizing a living labs approach

Stakeholder involvement and the development of climate services

The JPI Climate Scoping Forum Symposium held December 9-10, 2020 highlighted this topic as one of eight parallel WorldCafé table discussions. The EVOKED project helped facilitate the discussions and since the topic is central to increasing the usability of climate services, the background to the discussion text is shared here:

Stakeholder involvement in the co-design and co-development of climate services has been highlighted as necessary to identify user's needs and develop users' capacities to deliver climate services that are of high quality and relevant to better inform decision-making processes and the resulting decisions (EC, 2015: Roadmap for Climate Services). Improving the engagement between knowledge providers from various disciplines and potential users of climate services has therefore been incorporated as a central activity in European research initiatives (H2020, JPI Climate ERA4CS). Although projects have indeed increased their focus on collaborating with stakeholders, there remains a gap in truly being able to translate climate information into products that are useful and usable; unfortunately, developed climate services still do not always correspond to user's needs (Climateurope, 2019: Recommendations to Horizon Europe).

A review of the literature and ERA4CS funded projects indicates that there is a family of strongly related concepts (co-design, co-create, co-produce, co-develop) used to engage end-users and stakeholders together with climate scientists. They are context dependent and have been applied differently in the various ERA4CS projects. We therefore refer to these as the "co-family" of process to develop climate services. We also recognize that there is a gradient of interaction based on how the different projects understand this "co-family" of concepts. In this review, ingredients for this co-family of concepts and practices have been identified and include:

- Using iterative methods of engaging with end-users and stakeholders, meaning that they move beyond informing stakeholders and learning from (i.e. mapping stakeholders needs with surveys and/or interviews) to learning with (i.e. interacting and negotiating with stakeholders during workshops, field trips, training sessions).
- Initiating engagement with users and stakeholders early in the process of developing climate services. For example, this can be achieved by collaborating and participating on the problem definition and data analysis prior to the development and testing of the climate services. Furthermore, this initiation should be based on an ex-ante analysis of all stakeholders to avoid bias.
- Creating processes that enable user-driven development of the climate services. For example, processes that have high levels of intensity where the ownership is moved from the domain of science to the domain of practices.

During the two rounds of WorldCafé table discussions, a small group of mostly researchers and a handful of representatives from Research Funding Organisations explored best-practices of stakeholder involvement for the development of climate services (CS). Most of the discussion focused on minimising the gap on how to develop climate services that are useful and usable and correspond to the user's needs. The comments and suggestions from these discussions can be categorized in three overarching recommendations: i) improving the inclusion of stakeholder involvement and co-development of CS in projects via the proposal call text as well as the proposal review process, ii) identifying and involving stakeholders in such a manner that targets user needs, and iii) evaluating the CS product and the co-production process during throughout all stakeholder involvement activities.

Co-Evaluation of the development of climate services

Evaluating and monitoring both the climate service product and the co-production process should be an integral part of the co-development of climate services. This process has been embedded within the EVOKED framework methodology's co-creation steps to assess the user experience of the stakeholders involved in the Living Labs and the satisfaction of the developed climate services.

A questionnaire was developed to assess these aspects as well as to integrate the feedback into the ongoing co-creation process. A total of 28 questions were included for respondents to autonomously rate each question on a five-point scale ranging from strongly agree to strongly disagree:

- Living Labs process
    - The view of the actual meeting
    - The view on the Living Lab process
- Climate Service satisfaction
    - Knowledge about Climate Change Adaptation (CCA) in the locality of the respondent
    - Evaluation of Climate Services
    - Local Climate Services

Questionnaires were completed by about 140 respondents from a total of 12 Living Labs at the five case study sites. In general, the participants were positive; and those Living Labs with more homogeneous representation (e.g. Larvik, Norway with planners and contractors) had more similar responses than Living Labs with very heterogeneous participation (e.g. citizens in Flensburg, Germany).

Participants were relatively positive to the use of Living Labs; however, they were less positive to the concept of climate services. Feedback from practitioners indicate that the term climate services is an academic term. For example, the concept of climate services is rarely used in climate adaptation in Swedish municipalities and it was sometimes difficult to express what was meant by the services. Time to discuss and explain what climate services are was needed to reduce the confusion around the terminology. Sharing examples of climate services such as the story maps was very helpful as a practical way to package and visualize information and climate data. This is perhaps a start to a paradigm shift in how stakeholders understand and use climate data and eventually climate services.
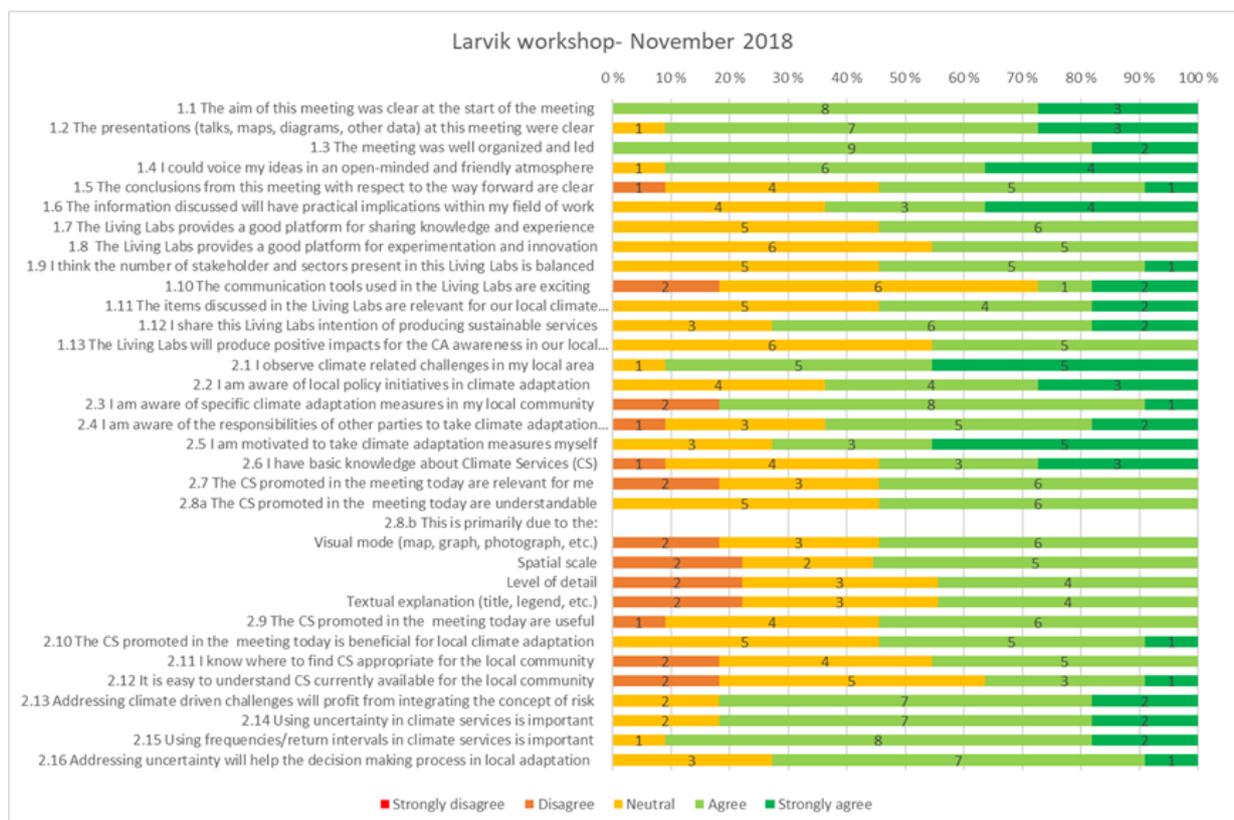

Figure 1. Example of survey results for a Living Labs workshop held in Larvik, Norway.

Virtual EVOKED dissemination. EVOKED was in good company during Climateurope's November 19th Webstival. In these challenging times they rearranged their planned festival to a series of virtual events called webstivals. The theme for the November event was related to Tools, demo cases, analyses and platforms with a focus also on and the communication of climate information. EVOKED was one of five ERA4CS funded projects that highlighted methodologies and best-practices in the session "Co-design – Balancing Complex Content with Local Context." (https://www.climateurope.eu/events-climateurope/festival/webstival-2020-home-page/webstival-2020-november-19/).

Figure 2. Broad European representation at the Climateurope webstival held November 19th, 2020

End-user knowledge and needs as the driver. The EVOKED framework methodology, illustrated in Figure 3, places the end-user in the center as the driver of the co-creation process to ensure that the needs, wants, and limitations of a potential product or service are placed at the forefront. Furthermore, the framework places an emphasis on integrated transdisciplinary research that creates a bridge between the end-user (in the center) and climate knowledge providers through translators who operate within climate sensitive sectors and have experience in facilitating stakeholder dialogue. The four steps in the framework methodology reflect the EU's focus on the co-creation aspects of climate services recognising the need to translate existing climate knowledge (observations, forecasts and predictions, operational products) and add value to the climate service while also generating synergy and innovation with the final result greater than the sum of its parts:

- Co-Design places user-needs at the forefront using Living Labs for engaging end-user stakeholder. Specific tasks have been identified as essential for the Co-Design of climate services and include; a i) stakeholder analysis, ii) needs and visions analysis and iii) context/governance analysis (SGI, 2018).

- Co-Develop develops visualization tools and climate change scenarios to generate new ideas and encourages knowledge exchange. Co-Develop process builds on the outcomes of the Co-Design process and provides additional background information and content. As such, Co-Develop focuses on developing local socioeconomic scenarios as well as visualization tools using an approach that encourages knowledge exchange (CAU, 2019).

- Co-Validate tests assumptions on climate adaptation measures and their implementation using a climate information design approach. The methodology used to plan and carry out the field trials unique within the field of climate services and is based on information design methodology (Raaphorst et al., 2020). Briefly, the methodology starts by identifying the information needs of the relevant stakeholders and subsequently works though steps of identifying the issue to be addressed, the desired action to be taken, and finally the graphic format this information is to be presented (Deltares, 2019; Deltares, 2020).

- Co-Evaluate assesses user satisfaction and provides feedback to bridge the process-content gap to improve each step in the framework methodology (NGI, 2021).

Selected EVOKED deliverables available at https://www.ngi.no/eng/Projects/EVOKED/# Reports-and-publications:

SGI (2018). Living Lab Co-Design Requirements Guiding Paper. Deliverable D1.1 of the EVOKED (Enhancing the Value of Climate Data) Project. 16.05.2018, 22 pp.

CAU (2019). Local set of scenarios (narratives and population projections). Deliverable D2.1 of the EVOKED (Enhancing the Value of Climate Data) Project. 15.04.2019, 65 pp.

Deltares (2019). Field trial framework for the use of knowledge concerning climate adaptation measures and their implementation. Deliverable D3.1 of the EVOKED (Enhancing the Value of Climate Data) Project. 23.04.2019, 26 pp.

Deltares (2020). Capacity building material for the field trials. Deliverable D3.2 of the EVOKED (Enhancing the Value of Climate Data) Project. 23.04.2019, 17 pp.

NGI (2021). User satisfaction of climate services. Deliverable D4.2 of the EVOKED (Enhancing the Value of Climate Data) Project. 26.02.2021, 100 pp.

EVOKED publications.

Ekeheien, C.; Kalsnes, B.; Oen, A.M.P.; Vasbotten, M.; Heggelund, I. (2019): Klimatilpasning i en usikker fremtid. Geoforskning's dissemination competition (in Norwegian). https://www.geoforskning.no/nyheter/grunnforskning/2032-klimatilpasning-i-en-usikker-fremtid.

Raaphorst, K., Koers, G., Ellen, G. J., Oen, A., Kalsnes, B., van Well, L., Koerth, J., van der Brugge, R. (2020). Mind the Gap: Towards a Typology of Climate Service Usability Gaps. *Sustainability*, 12(4), 1512. https://doi.org/10.3390/su12041512.

Reimann, L., Vollstedt, B., Koerth, J., Tsakiris, M., Beer, M., Vafeidis, A. T. (2021). Extending the Shared Socioeconomic Pathways (SSPs) to support local adaptation planning—A climate service for Flensburg, Germany. *Futures*, 127, 102691, https://doi.org/10.1016/j.futures.2020.102691.http://dx.doi.org/10.1038/nclimate1614

EVOKED – project facts
Duration: Sept. 2017 – Dec. 2020 (40 months)

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Keywords: Climate services, Risk, Uncertainty, Living Labs, Co-design

Partners: end-users and research organizations

Acknowledgements: Research funding organizations