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DEL07: Analysis of Outcome of the Activity

EIT Food

Knowledge & Innovation Center on Food,
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Disclaimer:

This report reflects the view of the author of this report but it does not necessarily reflect the view of other partners involved in the project nor those of EIT Food.

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1. Executive Summary

This Deliverable gives a detailed account of the methods behind the many different approaches and events that the project team conducted as part of “Cultivating Engagement: a citizen participation forum on vertical farming.” It serves as a guiding material for similar activities that aim to engage different stakeholders, including wider publics, consumers, more well-versed groups (in vertical farming) and practitioners, as well as expert groups. This reflects the activity’s goal to pilot different approaches for engagement, such as through a makeathon-style workshop, and to share best practices, as well as potential pitfalls. The portfolio ranges from surveys to public engagement to secondary data analysis to writing field notes.

Depending on the targeted group, the project team found that there are specific approaches and venues that work better than others. For instance, for addressing ‘citizens’ in a wider sense, the team opted for museums in the field of science and technology that also have experience with public engagement, and can serve as comparative venues (the Deutsches Museum and the Science Museum). To address interested individuals and collectives, as well as those more familiar with vertical farming, this requires good planning and connection to this ‘community.’ For that purpose, it was ideal that the vertical farm institute convened a vertical farm summer school (Skyberries Academy) that would network this target group. In order to better understand consumer behaviour, it was essential to also conduct consumer surveys, which included a virtual participation (Mobile Study), a sensory study of products from vertical farms, as well as a focus group. For the ideation of new concepts and innovative approaches how best to market products from a vertical farm, a makeathon-style workshop was the ideal format. It was also in the process of planning this event that we decided that students and young professionals engaged in horticulture, marketing, food design, etc. would be the perfect target group.

In sum, each topic and target group needs different settings and methodological approaches. They do not always follow in this order, but may emerge in the process (e.g. in case of the makeathon-style workshop where the target group came about in the planning phase for new marketing concepts of vertically farmed products). In any case, it is important to keep in mind that these four factors always speak well to each other: topic, target group, venue and method. For public engagement projects, to collaborate with external partners outside of an EIT Food consortium is indispensable, and should further be encouraged. This deliverable will hopefully be of use for these future projects between industry, universities, public institutions, and civic groups.

2. Introduction

This document provides an overview and analysis of the conducted events and applied methods of the Communication Activity “Cultivating Engagement: a citizen participation forum on vertical farming.” It serves as guidance material for new approaches and methodologies for the industry and other EIT Food partners interested in citizen participation approaches.

In the following, each event and/or method will be explained by detailing the respective approach which includes a description of method used, its advantages and disadvantages, as well as recommendation for future applications.

3. Surveys

3.1. Social Media Survey

The Social Media Survey is a co-creation activity in the form of data visualisation that provides a useful resource for understanding what issues drive discussions around vertical farming. It is based on a participatory social media research software designed for this Communication Activity, which offers an exploratory research approach to innovations or technologies, such as vertical farming. Using Instagram's public API (application programming interface), the tool is based on a dataset of entries on vertical farming (hashtagged with #verticalfarming), and used for two activities: The Social Media Survey and the Social Media Map (see below).

For the Social Media Survey, the tool displays a randomized set of images from which users are invited to choose three images they associate with vertical farming. The Survey aims to elicit alternative visuals – and thus visions – of vertical farming beyond dominant images in basic internet searches of vertical farming (e.g. architectural renderings). The survey “Re-vision Vertical Farming” (available in English and German) can be found at <http://revisionvf.org/> (see Figure 1.). Survey participants are also asked to explain why they chose the images and what vertical farming means to them. Additionally, they are asked to indicate how they relate to food, and technological innovation therein.

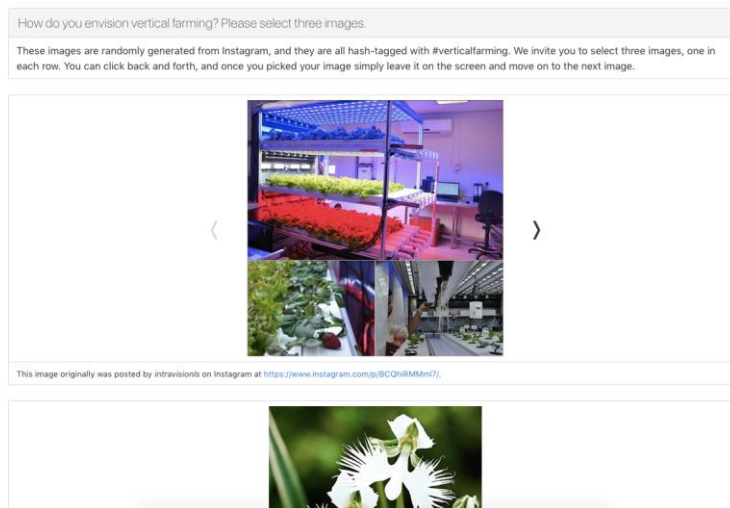


Fig. 1: Snapshot of online Social Media Survey

The advantage of this survey is that rather than set definitions or visualizations, it enables users to create individual 'visions' of vertical farming – that is, novel associations between images in the data set – by repurposing existing Instagram data. In order to keep participants' associations free and open and to avoid priming effects (i.e. choose images with most 'likes'), the dataset was kept random and different for each participant. Further questions allowed identifying trends in how different relationships to food, health, science and technology relate to visual representations of vertical farming.

Disadvantages of the survey were that the logic of the survey – taking images from Instagram to choose from – was not always straightforward, but once participants understood the logic, they liked the idea. Online uses were very low, which requires dedicated advertisement. In terms of data analysis, the association between visual representations and people’s relationship to food and technology may be time-consuming.

The Social Media Survey enables citizens as co-creators for subsequent projects to understand what is valuable in vertical farming publicity. The methodology therefore aligns with co-creation approaches advocated at EIT Food, and aims to identify opportunities for citizens to drive innovation. Such analysis informs the development of participatory methods for EIT Food and beyond to engage citizens and shape the food issues that concern them.

The Social Media Survey was used throughout several events, and as online survey, which will be explicated below.

3.1.1. Skyberries Workshop

On 1st March 2018, TUM researchers were invited to offer a workshop at the first vertical farming Skyberries Conference in Vienna. This was an opportunity to test a pilot version of the Social Media Survey (then called “Instagram tool”) with the conference participants. The workshop was called “Everyday visions of vertical farming: Instagram imaginaries.” The hypothesis was that visual representations of vertical farming often included spaces (i.e. architectural renderings, laboratory-like indoor settings) that seem disconnected from wider publics. There is a sense of detachment from the everyday life of those people who are not immediately engaged with vertical farming.

The aim of this workshop was to identify users’ different representations of vertical farming, and associated issues and images in their respective everyday life. Workshop participants were asked to select images from a database of Instagram they liked and 'storify' these images to create a story about (1) what motivates people to engage in VF, and (2) what issues the respective people care about.



Fig. 2: Participants discussing image selection

Advantages of this method were that it revealed a diversity of ‘visions’ at a conference that would generate primarily people familiar with vertical farming. It stimulated rich discussions and networking opportunities among conference participants and the TUM researchers (for the activity), who all had diverse interests and experiences in and with vertical farming.

Disadvantages were related to the fact that the online tool had several glitches and would not allow a smooth workshop.

Further, the conference facility's Wi-Fi network had issues as well. However, participants were cheery and saw the workshop as welcoming opportunity to talk about numerous issues beyond the tool.

It is recommended to test an online tool even in the pilot phase as thoroughly as possible, and to consider a version that is independent of Wi-Fi connection (i.e. one directly programmed onto the used tablets). Allowing sufficient time for this activity (appr. 2 hours) also allows for more detailed accounts and discussions, which had to be cut down due to time constraints.

3.1.2. Social Media Survey at the Deutsches Museum in Munich

The main events of the "Cultivating Engagement" Activity at the Deutsches Museum in Munich and the Science Museum in London had the Social Media Survey as core activity (with exception to the Science Museum, where the time was shared with a survey by project partner PlantLab). The forums aimed to foster an open dialogue on new technologies in food production. From 5th-7th July 2018, the Deutsches Museum hosted the walk-in event "Re-visioning Vertical Farming!" where museum visitors were invited to share their vision of vertical farming through the Social Media Survey, and to discuss the future of local and sustainable food systems. The survey was distributed via seven iPads through which the team of Activity partners invited visitors to fill out the Social Media Survey. At this event, 111 individuals participated in the Social Media Survey, and generally, museum visitors reported to have a vague notion of what VF is. Therefore, at the event, we added a function for users to indicate whether they are familiar, a little bit familiar or not at all familiar with vertical farming. The event also attracted to local TV broadcasting station BR (Bayerischer Rundfunk), which made a short feature on vertical farming and the event.¹

One advantage of using the Social Media Survey was not only receiving quantitative data (and visual data subsequently analysed). It also was a great way of engaging conversations on issues around vertical farming, and food and technology more generally. Hence, often the survey was only secondary while the conversations gave as much if not more, qualitative insights to people's relation to food and applied technologies in the food system. Another advantage of the walk-in setup was that people did not feel coerced to participate, but were free to engage or move on to the next section of the museum.

A disadvantage was that conducting an EU project, where the conducted language was English, did not translate well into a German-speaking setting. While we were aware of this potential issue, we did not anticipate that many museum visitors would choose not to engage as soon as they learned they could only speak English with some of the project team.

A recommendation for using online tools at the Deutsches Museum is to also engage staff at the museum, and to plan more in advance how roles and responsibilities will be distributed.

¹ <https://www.br.de/mediathek/video/vertical-farming-senkrechter-pflanzenanbau-in-der-stadt-av:5b40daf9c7d5c10018269fab> [accessed 10th December 2018].

3.1.3. Social Media Survey at the Science Museum in London

The Social Media Tool was also used at the event at the Science Museum between October 24th and 26th, which was part of the museum's ten-day-long "We Are Engineers Family Festival" event. Similar to the Deutsches Museum event, the citizen participation forum aimed to foster an open dialogue on new technologies in food production. The survey was distributed via four iPads through which the team of Activity partners invited visitors to fill out the Social Media Survey throughout 1 ½ days at the Science Museum. At this event, 147 individuals participated in the Social Media Survey, of which 36 filled out a simplified tool for children. This tool would only show images and invite children to partake in the survey. However, most individuals were parents or caretakers who were waiting for their children to finish a drawing activity that the project team facilitated as well: children were invited to draw postcards on vertical farming that they could then take home. Different to the event at the Deutsches Museum, project partner PlantLab tested a different communication line and showed a short video on vertical farming produced by EUFIC that was displayed on one large TV monitor.

Advantages of this setting was that people were very open and engaged to take the survey and discuss vertical farming more generally, since their children were taken care of through the drawing activity. A disadvantage was the high noise level as part of a larger event, where other stands were advertising their respective tool or technology. The context of a family event was unforeseen, and so to entertain the children. However, the drawing station also attracted many parents and caretakers to come to our station, and sit down for a moment.

The Science Museum offers a great venue attracting a large number of visitors. It is also free of charge, and therefore accessible to anyone that considers this a leisure time activity. Since the museum attracts mostly families, it is conducive to surveys or studies that also involve children.

3.1.4. Online Social Media Survey

The online version of the Social Media Survey (with a different domain) was not planned as part of the Activity, and facilitated as additional event or method. It was advertised between 20th September and 31st October 2018 as additional set of data for analysis. The TUM team renamed the domain to revisionvf.org to facilitate easy distribution and a name easy to remember. It was advertised via the project blog, the EIT Food twitter channel, and at public events and lectures by Mascha Gugganig. The goal for the online accessible version (which is still available at the above-mentioned web address) was to generate a comparative data set to the two at the museums with no prior instruction from the project team at a specific location. There were 17 entries to the Social Media Survey, and due to this low number a more substantive comparison is difficult to justify. However, it does show that the Social Media Survey can be done online if advertised properly.

The advantage of the online version was its independence from locations. It thus can be more accessible, for instance for disabled people, or those that did not know or could not come to the events at the museums. The disadvantage was that the project team could not elicit conversations that may spark by inviting people to take the survey on an iPad.

It is recommended to use a Social Media Survey as this for other topics that relate to food, innovation and technology. Any topic, say, precision agriculture, could be searched for on Instagram, and used as base of such a survey. Advertisement is essential to guarantee enough people take the survey.

3.1.5. TUM Open Day

The Technical University Munich (TUM) offers an Open Day once a year for interested people that consider studying at the university. As part of this event on 13th October 2018, the Munich Center for Technology in Society (MCTS), where the TUM project partners are located, had a stand and invited the project team to demonstrate the Social Media Survey. Most of the visitors were students and pupils, with some in attendance of their parents, grandparents or caretakers, who were curious to study at TUM. Most people that the TUM partners conversed with were international students from the nearby TUM School of Management. Here, a common igniter of conversations was the project poster (in German, and used for the event at the Deutsches Museum), which would lead to further exchange on vertical farming. Most people associated vertical cultivation of plants in patches and controlled environment settings.

This was an event that was not planned by the project team, but offered interesting additional insights of issues discussed. Since the focus was more on the university and its program, here the Social Media Survey served the role to show to a wider public what kind of projects the MCTS is engaged in. Those that were familiar with vertical farming or its related technologies were very excited to exchange while others saw it as exemplary to the engagement of an EIT Food partner – TUM, that is. What was observed in regards to the conversations and the Social Media Survey was exemplary for all face-to-face interactions. Often conversations flowed well and the transition to the filling out the survey came across as abrupt. After people finished the survey people generally preferred to leave, so not more engagement took place.

It is recommended to have enough time for conversations to take end more ‘naturally’ if there is also a survey that should be filled out. This is since conversations about a topic and the survey in combination often proved to have fruitful insights.

3.2. Consumer Surveys

3.2.1. Mobile Study (by Sophie Hieke, EUFIC)

Online mixed-methods study, with a small sample size (n=+30 per country) to allow for qualitative data collection through open-ended questions and some quantitative data collection through attitudinal scales etc. Using the Crowdlab platform, the study was fully optimised for mobile participation, i.e. participants taking part via their smartphones. Participants were further asked to engage in two types of for a: a private one, where they would exchange with the researchers on the project and a public one where they discussed their views with the other participants.

The nature of exploratory research (qualitative, with few participants) allows for an investigation of how people make sense of topics and how thought processes take place, to understand attitude formation. The mixed-methods approach further allows for some statistical testing of group differences, e.g. when asking for willingness-to-pay or people’s attitudes towards specific topics like general health interest of

food neophobia. The biggest advantage of this specific study, however, has lied in setting up a channel to allow for exchange between participants and researchers: participants were encouraged to ask the researchers questions throughout the study, either specific ones or general. The researchers have then discussed appropriate responses within the consortium before replying to the participants. Opening up a dialogue allows for a much more advanced investigation of the true issues people (consumers, citizens) have and want to discuss.

As with all small-scale studies, there is an issue with generalisability, meaning the external validity is not necessarily given. This has to be kept in mind when interpreting the results. While not being a disadvantage per se, this type of data collection bears many possible caveats with regards to GDPR and data handling – these have to be handled carefully so as not to be in breach or violation at any time.

Opening up the research process to allow consumers and citizens to drive the research agenda will make the approach more inclusive and can add to the objectives of citizen engagement within EIT Food. Such methods require resources (time, staff availability, knowledge and experience) which has to be taken into account when designing the studies.

2.2.2. Sensory Study

The quantitative consumer acceptance study was designed to understand consumer attitude towards vertical farming and if the information that an ingredient of a product has been produced in a vertical farm has a negative or positive effect on the concept and product liking. 240 German consumers (50% Hamburg, 50% Munich) evaluated three beverages (Iced Tea Peach, Lemonade Lemon-Mint, Smoothie Strawberry) in two sessions. In Session A participants were told that they receive a conventional beverage. In Session B participants received the same beverages as in session A but were told that they contain ingredients cultivated in a vertical farm. Furthermore, they received a written verbal concept and a video explaining vertical farming. Participants were asked about their opinion towards vertical farming and how they like the products and the corresponding concepts. The order of the sessions was randomized to avoid position effects (50 % started with session A, 50 % started with session B). The results allow a clear statement for German consumers on whether vertical farming is accepted and whether the information that a beverage contains ingredients cultivated in vertical farming influences taste expectations and acceptance. However, it must be considered that plants grown in Vertical Farming may not have the same taste characteristics as conventional products. Furthermore, it has to be considered that for the tested beverages only one ingredient was conceptual derived from a vertical farm. As a consequence, the results might not be completely transferable to foods that are completely made of ingredients from vertical farming. Further consumer tests are necessary to find out whether sensory differences in products made from vertical farming are accepted by the consumer. Ideally one product should completely be made from Vertical Farming to evaluate, if the acceptance depends on the amount of ingredients that is cultivated in Vertical Farming.

3.2.3. Focus Group (by Tessa Naus, PlantLab)

During a focus group, a group of selected people participates in a planned discussion that aims to elicit consumer perceptions towards a particular topic in an environment that is non-threatening and

accessible. A focus group is collective on purpose, and allows group members to interact with each other during the discussions. For the focus groups organised as part of the Cultivating Engagement project, designed to gain insights with buyers of fresh produce on their thoughts, likes and concerns on (indoor) vertical farming, both technology and food products, twelve participants with diverse demographics were selected by the discussions' moderator.

The focus groups have demonstrated to be a great method to let a particular group of citizens engage with Vertical Farming. It is a fast method to gather valuable insights from a representative market in just one 90-minute discussion. However, there is always a possibility that the participants may not express their honest and personal opinions. The moderator plays a crucial role preventing this, and in ensuring a good discussion, so it is recommended to have a skilled moderator for future use of this method.

4. Public Engagement

4.1. Social Media Engagement

4.1.1. Project Blog

The project blog was chosen as an outreach tool and platform to disseminate project results, communicate about a topic not widely known – vertical farming – and to allow for a two-way communication through such ‘likes,’ shares and a comment function. The blog was hosted at the EIT Food website at <https://www.eitfood.eu/blog/> and was regularly advertised through EIT Food’s and EUFIC social media channel. It posted blog entries from most project members to many different issues related to vertical farming, as well as the project’s events. Overall, there have been 10 entries with one more following in December 2018.

An advantage for a project team to run a blog is to use other digital media to drive traffic to this blog, by providing links to the blog, talking about new entries on the blog, etc. It gives an online presence to the project’s activities, and people can engage with it in ‘real time.’ Running a blog, however, needs constant maintenance and good time planning, as it is the case with any blog, but could fall short in the midst of doing a one-year EIT Food Activity.

It is recommended for EIT Food to suggest to other activities to run a blog, however, with assistance of a project partner that is well versed in this work (e.g. EUFIC).

4.1.2. Social Media Activities and Campaign (Jane Liu, EUFIC)

In order to disseminate the project material, we used the existing social media channels and followings of the project partners. The social media channels primarily used were Twitter, Facebook and Instagram. The advantages of these channels are to broaden reach of the project material, creating higher impression counts and an opportunity for engagement with audiences outside of the existing following. To engage with different audiences, different hashtags can be used to traffic audiences to social media channels and the Vertical Farm Blog. Additionally, these channels allow for visual and short information to be easily and quickly read.

However, each channel has its respective limitations. For example, there are many bots or fake channels on Twitter, which means a possibility of our content having higher statistics but less engagement with real people. Twitter followings might also consist of partners or people in industry, rather than real consumers. Facebook also has the disadvantage of high impression count, as users may pass the material on their newsfeed, but not actually engage with the post. Similar to Twitter, Instagram also have users that often “like for like”, but who are not genuinely interested in the content but only come to posts to promote their own channels. It is important to note, however, that Instagram had a much higher engagement with real people with genuine opinions on vertical farming. This is showcased by the quality of the comments made on each post.

For future applications, when trying to increase reach, it would be great to use platforms like Twitter and Facebook. However, if trying to increase engagement with real consumers, Instagram would be the better option.

4.2. Face-to-Face Engagement

This is a brief description and evaluation of events and engagement methods in the following three citizen participation locations: The Deutsches Museum in Munich, the Science Museum in London, and the Design Museum in Den Bosch, NL (makethon workshop). The two science and technology museums were deemed ideal public spaces in which to stage the citizen participation forum. Both are internationally recognised institutions on the most important innovations in science and technology. Both museums have also served as settings for citizen participation and engagement with technoscientific innovation. These museums therefore offer both open public spaces and provide a context in which social and ethical dimensions of vertical farming can be articulated and engaged with. The Design Museum in Den Bosch proved ideal as PlantLab is located in the same city, and as it hosted a relevant exhibition called “Food is Fiction” on the role of food design.

4.2.1. Deutsches Museum, Munich (by Franziska Nees, TUM)

This engagement event was a three-day citizen participation forum in the hall of honours (Ehrensaal) at the Deutsches Museum in Munich, Germany, from July 5th- 7th 2018. The event was advertised publicly on Munich public transportation, the museum website as well as through personalized emails to stakeholders. The event was a walk-through setting, meaning that the exhibition was placed in a passage hall on the first floor between other exhibitions and the cafeteria. The passage hall is a large area relative to the exhibition space and includes statues and paintings from a permanent exhibition. Used displays and materials comprised five roll-up banners, one demonstration model including plants and LEDs, four high tables, a snack table and a table with a fixed survey monitor.

The passage location created voluntary and involuntary traffic, meaning that some visitors were drawn to the stand without previously knowing that it was there. The space was well aired-out, because windows could be opened, and outside light created a pleasant atmosphere. The demonstration model by PlantLab received much positive attention and appeared to draw many visitors to the stand. However, the passage location was also a disadvantage, because those visitors who did not want to engage needed to walk through the area, where some avoided the project team. Further, compared to other countries, museums like the Deutsches Museum are for the most part not free of charge in Germany. Therefore, it targets a selected group of people with a socioeconomic status that indicates going to a museum is feasible and/or a desired leisure time activity.

It is recommended to use demonstration models for citizen engagement to draw attention to the event. It is also recommended to make sure that as a walk-in event a citizen participation forum is well advertised by the museum: in its program, in the venue itself and among museum staff, so they can point people to the event. Overall, the Deutsches Museum offered a great venue for citizen participation and

engagement events. For EIT Food, it is recommended to inform its EIT Food “Network Partner”, of which the Deutsches Museum is one, that they have this status, and what it entails.

3.2.2. Science Museum, London (by Franziska Nees, TUM)

The citizen participation event at the Science Museum in London lasted three days from 24th-26th October 2018. It took place during a family festival. Because of this family element the event staff offered a children’s activity, which was to draw vertical farms on postcards. During this event, 115 adults participated in the Social Media Survey. Additionally, 37 children took part in a reduced child-friendly version of the Social Media Survey. Most of these individuals were parents or caretakers who were waiting for their children to finish the afore-mentioned drawing activity. The location within the museum was in a basement area dedicated to temporary family activities. Used displays and materials comprised two roll-up banners, one large TV monitor presenting vertical farming operations and four large tables with postcards, felt-tipped pens and coloured pencils. Approximately four to five iPads were used by staff at a time to collect the Social Media Survey results.

The family event created much traffic. There was less reluctance to fill out the Social Media Survey compared to Munich, in particular from parents or caretakers who were relieved that their children were entertained by someone other than themselves. The offer of a children’s activity at times also created a quid pro quo situation, where parents or caretakers filled out the survey in exchange for their child’s supervision. The TV monitor showing a video received positive attention and made many visitors stop and engage at the stand. The inclusion of children was a slight diversion from the target audience of the Cultivating Engagement project because the research mainly seeks the opinions of adults as primary decision-makers. The basement location created stuffy air and the lack of natural light a slightly unpleasant atmosphere, which did not seem to significantly impact the event result but was nonetheless noteworthy. A further disadvantage was not having the demonstration model used in Munich at this location, as museum staff and some visitors were keen on seeing an example.

A demonstration model with plants is recommended to be included in citizen participation events. It is also recommended to offer a service or treat to participants (such as in this case entertaining their children) in order to show gratitude to participants and to increase engagement. The use of a large monitor showing visuals of vertical farming is also encouraged to increase engagement, despite the risk of priming effects, i.e. influencing citizens’ first impression.

4.2.4. Makeathon-style workshop (by Tessa Naus, PlantLab; Franziska Nees, TUM)

A Makeathon-style workshop is a shorter and more focused version of an actual Makeathon, which usually runs about 40 hours. Its goal is to bring together people with different educational and professional backgrounds, to design a new concept. For the Makeathon-style workshop, which only took eight hours, the activity partners chose a product concept for a contemporary consumer problem. The Makeathon-style Vertical Farming workshop organised as part of the Cultivating Engagement project brought together sixteen young professionals and students from several Dutch (applied) universities, who had diverse educational backgrounds. It took place on 5th October 2018. The participants thought about their own food concept for vertically farmed produce in multidisciplinary teams, wherein they

incorporated a challenge that (indoor) vertical farming faces. The students and young professionals were introduced to the topic of vertical farming with a presentation by the project members. Following this, they were divided into teams to brainstorm and develop a marketing concept for vertically farmed products. The participants competed with their ideas in short 5-minute presentations at the end of day. The four groups were evaluated during presentation by four jury members. At the end of the day the winning team received an LED plant growing kit, each. Used materials included flip-charts, pens, glue, post-it notes and template posters. Overall, the concepts that were created by each of the teams built the base for potentially further developing product ideas derived from vertical farming together with the Makeathon participants. Hereby, the Makeathon-style workshop has shown to be a great format to let a particular group of citizens engage with vertical farming.

An advantage of the event was high engagement because only individuals who were motivated to register for the event were present. The Mini-Makeathon format limited the number of participants, which provided interactions rich qualitatively, but a participant amount low quantitatively (compared to museum events). The competition setting, although motivating, also appeared stressful in some instances, where some students tended during the presentation or disappointed in not winning. Incentives are definitely required to make people participate for Makeathon-style workshops. If considering such event for future use, one should ask him or herself the question whether the organizational efforts and costs of such event will weigh up against its outcomes.

If the aim of a citizen participation endeavor is to reach a large amount of people, this intensive format might not be the right choice. If the aim of a participation endeavor is to achieve in-depth engagement with people already interested in vertical farming, then this format is likely the right choice. If a Mini-Makeathon setting is chosen, it is recommended to decrease the competition aspect, reducing the amount of jury members or perhaps completely forgoing a jury in order to keep the mood lighter and fun.

4.2.5. Skyberries Academy

As part of the 2-day Skyberries Summer Academy that was organized by the Vienna-based advocacy network “vertical farm institute” (vfi), Mascha Gugganig gave a lecture and facilitated a workshop on “vertical farming and society” (see DEL 05 for details). The request was to sensitize participants who for the most part had a background in engineering or technology to the importance of thinking about societal issues when planning a vertical farm. The Academy attracted more than 25 participants of more than 11 nationalities, who had diverse backgrounds ranging from lighting to urban energy systems and solutions business planning to urban planning to diy systems at home. The workshop involved an ‘analogue’ Social Media Survey based on the online version where participants were asked to draw three images of vertical farming (rather than choose existing images from Instagram, as the SMS does). Their images, comments as well as images selected at the Deutsches Museum event now provided the base for everyone to vote their favourites, and to prepare a presentation of what their ideal vertical farm should include. This generated rich and deeper discussions, among others on the role of vertical farming as ‘unnatural’ production technique.

The advantage of this workshop, as part of a network of vf-interested stakeholders, was that it provided great connections to people familiar with vertical farming. Many participants were also very interested in EIT Food and wanted to learn more. It is recommended that EIT Food therefore offers a contact address, person or information for Activity leaders, so that this can be passed on to interested people.

5. Secondary Data Analysis

5.1. Social Media Map

The Social Media Map is designed to identify the key socio-technical issues developing around vertical farming. The maps, of which TUM researchers produced three during the Activity are visualizations of how vertical farming is co-hashtagged with other issues, e.g. “sustainability,” “urban farming,” “hydroponics.” The social media mapping for “Cultivating Engagement” has focused on twitter and Instagram and was done three times throughout the duration of the project: in December 2017, June 2018, and December 2018. It serves as empirical material of online social communities that gives further insights to issues people relate vertical farming with. It can also serve as public engagement platform that invites users to scroll around the virtual map. This has been implemented in an entrance to the project blog that can be found here: <https://www.eitfood.eu/blog/post/help-us-analyse-vertical-farming-on-twitter>. For the Social Media Maps, the Instagram tool also collects associated metadata (likes, location, text, comments, hashtags, timestamps). This enables further research on online issues related to vertical farming.

Advantages of the Social Media Map are very accurate representations of issues that people associate vertical farming with in virtual spaces. It provides interesting networks of related issues that can subsequently also be used as a kind of ‘survey’ with project partners (as was done at the kick-off event of the Activity “Cultivating Engagement”). This is a rich quantitative set of data that allows many further analyses of the data set (e.g. likes, comments, etc.). However, such analyses may take longer time than a one-year activity can facilitate.

It is recommended to use a Social Media Map if project partners are interested to learn about online communities and their respective concerns, related topics and hopes in regards to a specific issue (e.g. food waste, precision food, etc.).

6. Field Notes

6.1. Writing detailed field Notes

The Activity partners not only collected metadata of the respective events and applied methods. They also combined these with qualitative data obtained during interactions with visitors. While survey data and even interviews provide a central source for basic data over a specific issue, not all information can be gathered through these formats. In a more loose and interactive setting like a workshop or a museum event offers a great setting to gather more or missing information. As indicated above, many conversations were generated through the Social Media Survey and gave additional information over how people related to vertical farming. These field notes were essential in contextualizing the collected data through the survey (see DEL04, Part 1). Detailed field notes were also essential among groups where participants were more well-versed with vertical farming. For instance, at both Skyberries workshops the events generated much exchange over certain aspects/technologies/approaches often with less knowledgeable participants. None of this could have been recorded through a survey, but through field notes written by project partners these dimensions were also captured.

An advantage of writing detailed field notes is that relevant conversations can be noted in a 'fresh' sense, right after or during an event. Often these conversations or other observations, e.g. that people evaded a stand or were shy, are not recorded in a survey, and so give a great context to the otherwise collected data. A disadvantage is that one should take detailed field notes right after or during an event, which may be interruptive.

A recommendation for project leaders can be to always take field notes – not only of public events but also of project meetings and discussions. This helps contextualize if certain issues or concerns may arise, and where solutions could be offered.