

Citizen Science for Responsible Food Consumption and Production- Conference Report “Knowledge for Change: Citizen Science SDG Conference”

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Introduction

When Johan Rockström, director of the Swedish Resilience Centre, presented the interconnectedness of the SDG’s in relation to the food-system¹, he revolutionized the way we think about the relationships of the SDG in respect to food production and consumption. According to the novel arrangement of the SDG’s, evidently, economies and societies are embedded parts of the biosphere and the biosphere provides the basement of all other connections. It mainly implies moving away from the still established sectorial approach of sustainability where social, economic, and ecological development are seen as separate parts. It is since strongly argued, that several transformative changes are needed to achieve sustainability. In our session, we aimed to present the practice of citizen science as a format to pathway transformative changes in food systems. Five representative case studies were presented (Case Studies 1-5) and policy recommendations were developed. Final remarks of the sessions are presented at the end of the report.

Case Study 1: The impact of citizen science towards sustainable production of aromatic plants

In here presentation, Jessica Amprako, presented the implementation of citizen science as a tool for the development of sustainable production of spices in Bangladesh and Pakistan. In this project, indigenous agricultural practices are used for the production of spice and herbs. The potential of increasing crop productivity is assessed. Further, the project examines the sustainability of agricultural citizen science in spice and herbs production with local smallholder farmers. Citizen science is implemented to safeguard the knowledge of indigenous agricultural practices as well as to contribute to sustainable production of spices and herbs.

Recommendations for policy makers: Citizen Science is a useful tool for the assessment of sustainable agriculture production system. Incentives for smallholder farmers as well as educational workshops for local farmers are important for the implementation of this project.

SDG’s addressed in this research



¹ <https://www.stockholmresilience.org/research/research-news/2016-06-14-how-food-connects-all-the-sdgs.html>

Case Study 2: The Food Waste Experiment - a novel method for calculating food waste

In the presentation by Rahel Pateman, we learnt about the integration of Citizen Science in research questions addressing issues of food waste. In the Food Waste Experiment, pupils all over Sweden assess the amount of food waste using an app. With this valuable information more accurate measures of food waste are developed. Citizen Science is applied to fill in data gaps for the documentation of food waste at the household level and at schools. The participatory approach further enables co-design processes in food waste intervention strategies.

Recommendations for policy makers: Read our priority questions to decide where to focus investment, consider the food system as a whole and engage with the diverse actors across the system and further invest in co-created citizen science projects which aim to tackle the issue.

SDG's addressed in this research:



Case Study 3: Citizen engagement in biotechnology innovation - the need for research and the role of ethics

In the third presentation, Siri G. Carson referred in her talk to the issue of genome editing for producing novel agri-and aquaculture products in the realm of biotechnological inventions. Citizen Science is applied in this context to assess the potentials and risks associated with genome editing in agri-and aquaculture products with stakeholders and citizens. The experiences from this project show that in highly contested areas of research such as genome-editing in agri- and aquaculture, citizen engagement approaches should be based in transparent scientific and normative analyses. Future exploration and implementation of non-safety assessments in regulation of genome-editing technologies need a diversity of approaches, including knowledge-based stakeholder and citizen engagements.

Recommendations for policy makers: Implement diverse forms of non-safety assessments in regulation of genome editing technologies, support funding mechanism for normative analysis and enhance research-based framing of citizen engagement, specifically by strengthening the focus on normative analysis.

SDG's addressed in this research:



Case Study 4: ReThinking Food: empowering citizens in societal change processes

In her talk, Danielle Wilde highlighted the values of transformative society driven processes on the example of a three-course inquiry acting as a bottom-up food system transformation. Together with Danish households, the connections with daily food and eating practices were determined and set into context with local, regional and international agendas of sustainability. A central question in her art and research is how to best co-create citizen science, drawing on participatory research through design thinking and acting.

Recommendations for policy makers: Take actions to raise awareness of more sustainable & biodiverse foods, through research and community involvement, subsidise sustainable & biodiverse ingredients to democratise access and build recognition for inclusionary methods in citizen science

SDG's addressed in this research:



Case Study 5: Citizen science and the food system: opportunities for reducing loss and waste

The final case study was presented by Fredrick Broeneus whose investigation is about the exploration of opportunities for using citizen science to answer 26 priority research questions identified by experts as being critical to achieving SDG12.3. In the focus of his research are activities to integrate citizen science as a tool to quantify food loss and waste across different areas of the food system and to understand causes of food loss and waste towards the development of solutions. It became clear that through citizen science approaches, the achievements are beyond data collection. Specifically, behaviour changes ranging from private individuals to policy-makers can be triggered through citizen science. Thus, it is concluded for the future of citizen science to bring together all actors in the food system in citizen science projects in order to build shared understanding that will ultimately lead transformative changes that are needed to achieve sustainability.

Recommendations for policy makers: Foster healthy, climate-friendly eating habits, by introducing more such menus in schools, help consumers make sustainable, informed choices when buying food and demand transparency and open access to sustainability data from the food industry.

SDG's addressed in this research:



Conclusive remarks “Citizen Science for Responsible Food Consumption and Production”

The diversity of citizen science activities and research questions addressing issues around responsible and sustainable food systems clearly show, that the human food system impacts all the 17 SDGs in an interconnected way. Food production as well as consumption can be thus seen as an important cross cutting issue to address the SDGs, politically and socially. Great opportunity exists to apply citizen science in future food-system research and activities. From the perspective of designers of the citizen science projects, it seems important to identify and focus on specific Sustainable Development Goals to provide specific data or to push learning processes regarding a specific pathway towards sustainable development.

Overall, the field of citizen science in food-systems with its contributions to the SDG’s is a promising approach to involve citizens into scientific processes and together pathway sustainable development. We learnt about different approaches to involve stakeholders and citizens to generate or conserve data and information about food waste as well as conserve indigenous knowledge about spices and herbs. Overall, citizen scientists as well as researchers integrating citizen science in their research call upon policy makers to take up the knowledge generated via citizen science in policy decisions and to enhance conditions to further implement citizen science in food system research. Supporting the interaction with policy makers, in some cases it might be an interesting approach to involve decision makers into the citizen science process.

Specific policy recommendations are now available to policy makers and can guide the way towards the achievement of various SDG’s as highlighted in our case studies. Some of these recommendations are also part of the Declaration of the conference² where future roles, contributions and concrete potentials of citizen science to advance the SDG’s are addressed.

The full session can be viewed here: <https://www.youtube.com/watch?v=49vwePTYNIw>

² <https://www.cs-sdg-conference.berlin/en/declaration.html>