

Between analysis and activism: How do young scientists think about sustainability research?

Sustainability-oriented research increasingly navigates between activism and analysis. How do young sustainability researchers in Switzerland see their role? We provide insights into a saguf project and initial findings.

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As the climate crisis intensifies, the role of scientists in addressing it is coming under growing scrutiny (Herzog et al. 2023). Concerned scientists argue that traditional methods of objective and detached science do not elicit adequate social and political responses, and see peaceful civil disobedience by scientists as a necessary and justified strategy to highlight the urgency of the situation, challenge the status quo, and initiate social change (Capstick et al. 2022, Wyatt et al. 2024). This contrasts with positions that see the preservation of scientific objectivity as science's greatest transformative lever. Between these extremes, there are many forms of moderately engaged research that rely on transdisciplinary dialogue with politics, society, and other

stakeholders to co-create knowledge that drives meaningful change. How does the young generation of scientists position themselves in this discourse on the role of science in the social transformation towards sustainability? What are their perspectives, visions, and motivations regarding research that serves sustainability transformation?

Supported by the Swiss Academy of Humanities and Social Sciences (SAGW), saguf has launched the *Young Generation* project to explore what drives doctoral and postdoctoral researchers across disciplines and thematic interests. The project aims to facilitate a conversation that engages a wide range of young scientists, bridging those seeking to uncover patterns and principles within natural sciences with those exploring the richness of context and meaning within interpretive social sciences. Through qualitative interviews, focus group discussions, and surveys, the study seeks to uncover how they navigate their roles as concerned citizens and researchers within a scientific system that prioritizes objectivity and established paradigms, sometimes at the expense of acknowledging positionality, relationality, and connectivity.

project, which involved 15 in-depth interviews with young scientists from various disciplines. As this phase draws to a close, two themes emerge that offer deeper insights into the complexities of transformative research for sustainability from the perspective of young scientists.

Balancing innovation, impact, and responsibility

An important theme that emerged from the interviews with researchers concerns the ethical dimensions of sustainability research, particularly how young scientists navigate the pressures of academic expectations while striving for meaningful impact. As Vucetich and Nelson (2010, p. 540) argue, sustainability is deeply intertwined with ethical considerations, often overshadowed by science-based technological solutions. Recent analysis by Park et al. (2023) suggests a significant decline in the disruptiveness of scientific papers and patents over time, signaling a critical ethical dilemma for sustainability research. Modern research increasingly follows established methodologies, limiting the potential for groundbreaking innovations. Park et al. (2023, pp. 142 ff.) suggest that scientific work is less likely to push boundaries, raising concerns about the prioritization of short-term academic gains over long-term societal impact. If researchers continue to focus on smaller pieces of existing knowledge, how can we ensure that

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Reflections on the exploratory phase: Themes in sustainability science

Here, we present and reflect on initial findings from the exploratory phase of the

creativity and innovation in critical areas such as sustainability research are not stifled?

This broader trend is reflected in the experiences of individual researchers. One early career researcher expressed concern that innovation is not always encouraged in his field:

It seems to me that it's not so accepted in science to do very new things [...] in my discipline, I have seen that young researchers focus on the "low hanging fruit".¹

The same researcher expanded on this idea by pointing to the ethical dilemma of time allocation in academia:

If I spend half a year working on something that doesn't help me get a first-author publication, then it feels like [...] wasted time.²

This raises critical questions about the values that drive research priorities and whether they are aligned with the broader goals of sustainability.

The motivation to create a meaningful impact was another recurrent theme, particularly among those who were committed to making a difference beyond their academic work. One of the doctoral students stated:

My work doesn't really end when I'm done with the research; it ends when I start to see the impact of my work.³

This perspective challenges the traditional notion of scientific research as complete upon publication, and instead emphasizes the importance of seeing research through to its impact in the real world.

Moreover, some scientists are acutely aware of the rigorous standards applied to their methods but question whether these standards truly measure the impact of their work:

I feel that in our field the methodology is reviewed to see if it has been done correctly [...] but the results themselves are never really checked. Nobody is measuring the actual impact; it's just a question of whether it was done in a scientifically correct way.⁴

This quote highlights a tension between the pursuit of rigorous research and the need to reflect that such research contributes to real-world scenarios.

The ethical dimensions of sustainability research are deeply intertwined with the structures and career paths of the academic system. Early career scientists, such as doctoral students, may face challenges in asserting themselves within a highly competitive academic system that may overlook the diverse skills and competencies needed by today's researchers. Their precarious position, compounded by the limited career paths available in academia, may make them less vocal about practices within their disciplines that hinder disruptive and innovative scientific practices that challenge the status quo. In contrast, postdoctoral researchers, having gained academic recognition, may feel more empowered to share radical perspectives on improving scientific practices and inspiring ethical leadership within academia and beyond, effectively inspiring the new generation of researchers.

Navigating specialization and interdisciplinary collaboration in sustainability science

What challenges arise in balancing specialization with inter- and transdisciplinary collaboration? Another prominent theme from the interviews is the complex relationship between specialization and these collaborative efforts, especially when addressing sustainability issues, which require novel approaches and span environmental, social, and economic domains. While funding bodies increasingly support interdisciplinary projects, scepticism is growing among researchers about the authenticity of these collaborations. Concerns have been raised that some projects may be designed more to secure funding than to foster true interdisciplinary work. While interdisciplinary work offers creative possibilities when thoughtfully approached, achieving this in practice remains a challenge:

When we work effectively with other disciplines from the beginning, I believe that creativity is born.⁵

However, some researchers find that interdisciplinary projects often remain multidisciplinary, with disciplines working side by side rather than fully integrating perspectives. For instance, one researcher working on a large project involving some 15 universities and institutions expressed doubts about its effectiveness, noting that much time was spent in unproductive meetings. This issue of time and meaningful engagement is echoed by other researchers who emphasize the importance of structured support and skill development in interdisciplinary work. This raised questions about the project's real impact and highlighted the challenge of making interdisciplinary efforts truly meaningful.

Another researcher emphasized the need for dedicated "integration time" and coaching, particularly for junior research groups or those with limited interdisciplinary experience. This highlights a broader issue: the lack of "about-knowledge", a term coined by Prialux and Weinel (2018) to describe the essential interdisciplinary awareness and practical experience required for effective collaboration. Without this combination of awareness and hands-on experience, researchers can remain siloed within their fields, struggling to exchange with colleagues from other disciplines, particularly when they are immersed in their doctoral studies.

Beyond structural challenges, researchers also face practical barriers. One doctoral student pointed to the need for flexible funding structures that support interdisciplinary collaborations on smaller budgets or on an hourly basis. They questioned whether they should acquire essential new skills themselves or collaborate with experts, emphasizing the inefficiency of trying to master all necessary skills independently. This perspective underlines the im-

¹ Doctoral student in natural sciences, interview August 8, 2024.

² Doctoral student in natural sciences, interview August 1, 2024.

³ Doctoral student in social sciences, interview July 29, 2024.

⁴ Doctoral student in natural sciences, interview August 8, 2024.

⁵ Doctoral student in circular economy, interview July 30, 2024.

portance of funding that allows researchers to focus on their strengths while leveraging others' expertise, leading to more efficient and impactful research outcomes.

Reflecting on the structural conditions of academia, one postdoctoral researcher argued that the science system, by design, favours specialized knowledge over the integration of diverse perspectives. This emphasis on specialization encourages researchers to narrow their focus, progressing from disciplinary doctorates to increasingly specialized professorships. While this path advances knowledge within specific fields, it also creates barriers to addressing complex societal issues that require insights from multiple disciplines.

The same postdoctoral researcher also noted that when interdisciplinary research succeeds in contributing to societal chal-

BOX 1: Take part in the intergenerational dialogue

Work-in-progress Workshop, organized as part of the *Sustainable University Day*, November 12, 2024.

Registration: <https://u-change.ch/de/sud/sud-2024-zurich>.

Join us for a conversation at the *Intergenerational Booth*, a place to share perspectives and deepen dialogue during the *saguf Annual Conference Innovation in Transformation*, November 20–24, 2024.

Registration: https://saguf.ch/en/events/uuid/i/cfffc274-163a-514b-b8fc-5b973555c2c2-Innovation_in_Transformation.

while activism is significant for personal or civic engagement, it is not central to most scientists' roles. Instead, these researchers engage across a spectrum, from using their research for immediate action with tangible societal impact, to more reflexive, critical practices that challenge established scientific paradigms. This shift in emphasis highlights the diversity of

the practical challenges and opportunities facing researchers today.

Finally, we aim to create a space that highlights scientists' contributions to ethical and cultural sustainability. By fostering discussion beyond traditional academic boundaries, we encourage PhD students and postdocs to share their experiences navigating the challenges of research. Through this project, we lay the foundations for a more nuanced and reflexive understanding of sustainability research that recognizes both its limitations and its transformative potential. We invite all interested parties to join our upcoming focus group discussions and dialogue events to contribute to this critical conversation and to shape the future of sustainable science together.

What new models of interdisciplinary collaboration and communication are needed to ensure that research has a meaningful impact within academia as well as in society?

lenges, "it often happens in spite of the system, not because of it".⁶ The academic structure, therefore, not only makes interdisciplinary work challenging, but also positions it as a departure from the traditional academic path.

In summary, whether early career researchers remain focused on their disciplinary specialization or develop basic interdisciplinary awareness often depends on their specific research themes and focus areas. In some fields, the need for interdisciplinarity could emerge earlier in their doctoral studies, fostering an environment where collaboration is seen as an essential skill, supported by sufficient space, time and resources.

Outlook

This project began by exploring the growing role of activism in the scientific community, especially among younger scientists. However, interviews revealed that

ways in which young scientists contribute to sustainability, whether through applied research, critical analysis, or innovative educational methods.

These findings will be used to inform subsequent project phases. First, a national survey will gather insights from sustainability-oriented researchers across generations and disciplines on key themes emerging from the interviews. Focus groups will then explore researchers' visions for a sustainability-oriented science system. How can science evolve to meet the pressing demands of sustainability without sacrificing academic rigor or ethical responsibility? How can the scientific community better combine the innovative and risk-taking spirit of younger researchers with the accumulated experience of established scientists? What new models of interdisciplinary collaboration and communication are needed to ensure that research has a meaningful impact both within academia and in the broader societal context? These questions are not merely theoretical, but deeply rooted in

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6 Post-doctoral researcher in environmental sciences, interview August 18, 2024.