

Reviewing transdisciplinarity and knowledge co-creation concepts in Japan and abroad

*Yuko Onishi¹

1. Research Institute for Humanity and Nature

There has been growing interests in knowledge co-creation between science and society in addressing the environmental issues facing humanity today. The environmental issues are often described as "wicked problems", as they are complex and uncertain, and have a wide range of stakeholders who are affecting or being affected by the problem in different ways. For such wicked problems, it is considered effective, legitimate, and appropriate that the stakeholders jointly create knowledge in addressing or solving the problem.

In the wake of growing international concerns on the environmental issues such as climate change and the loss of biodiversity, the term "transdisciplinarity" was coined in 1970 in the OECD conference. It was suggested as an important concept for integrating various knowledge encompassing academic disciplines in humanities, social science, and physical science, and including knowledge beyond the academia, i.e. the society.

50 years later, in the 2020s, transdisciplinarity is re-gaining its momentum. In 2015, Future Earth, the international research platform for global sustainability studies, was established which include 27 global research networks on various aspects of environmental issues. Future Earth places transdisciplinarity and interdisciplinarity as the main research approach, and has been playing a catalytic role in spreading the importance of strengthening science-society interactions for environmental research.

On the other hand, there has been significant conceptual developments in transdisciplinarity during the past 50 years as well as a rise of akin approach such as participatory action research and multi-stakeholder partnerships. In addition, there are also similar concepts in different regions, for example, in Japan, terms such as "co-creation", "collaboration", or "societal implementation" have been used to describe the engagement of society in research projects. Roles of the researchers and the stakeholders have been frequently discussed, which differ depending on the problem concerned, the process undertaken, and the outcomes aimed at.

In this presentation, a review of the current discourse on transdisciplinarity and the related approaches will be provided, with a particular focus on the research process and the societal outcomes. It argues that while transdisciplinarity or co-creation has a valid theoretical underpinning, it faces many challenges, as in practice, the values, or the expected outcomes, of undertaking such approach differ between the scientists and the stakeholders.

Keywords: transdisciplinarity, co-creation, collaboration, societal implementation, action research