

Increase of global concentration of atmospheric CO<sub>2</sub> is not stopping at all, and due to that increase extreme events, such as heavy rain and drought, or health problems resulting from heat in the summer, have become more intense in society over the world. Global crisis such as climate change and biodiversity loss are now urgent issues in our world. In order to realize sustainable future academic society should be responsible for developing new scheme to transform our world with new science and technology together with society.

Any one single academic discipline may not solve wicked problems. There are growing needs to integrate fragmented science and technology and to implement their outcomes in real society. Transdisciplinary approach is a way to integrate science and technology together, and to implement their outcomes in society. In the last ten years research programs named SATREPS, Future Earth (FE) and Science, Technology and Innovations (STI) for SDGs have started as international joint programs.

The Science and Technology Research Partnership for Sustainable Development (SATREPS) program, which was started 15 years ago in cooperation with the Japan Science and Technology Agency (JST) and the Japan International Cooperation Agency (JICA), aims to develop transdisciplinary approach discovering pathways toward the solution of the partner countries' problems through collaboration between science and technology and society in the counter-country. One of the features in SATREPS is to involve stakeholders from outside of academia for decision making and policy making from the beginning stage of research planning. It enables to encourage discussions between scientists and policy makers for implementing new tools in society.

Also, in the FE program which is an international joint research program funded by the Belmont Forum (an assembly of unions of research organizations and research funding agencies from all over the world), it has been proposed that not only should researchers be involved but also interested parties and related organizations in the field concerned should be involved as stakeholders from the planning stage of research in order to implement research results in society.

The background behind the establishment of the SATREPS and the FE program was the perception that science programs so far have been contributing new findings through papers and reports, but have not always found specific solutions to the wicked problems in real society. To solve actual global problems, some sort of new mechanism needed be built to link traditional curiosity-driven studies and social challenges.

In this presentation SATREPS and FE programs are surveyed and the methodologies in these programs to link science and technology with society are investigated in order to find possibility of transdisciplinary approach for finding solutions in the wicked problems, and to investigate a pathway towards one-health-one-world. In particular, customization and commonization (generalization) of science and technology in different areas or countries is introduced in transdisciplinary approach.