

The Transdisciplinary Research of Sustainable Development in Taiwan

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Trans-Disciplinary Research (TDR) has been recognized as the key for delivering actionable knowledge to achieve a more sustainable future. Through the years, research in earth system science has improved our understanding of environmental changes. Human activities further disturb the global environment and make our society face great sustainable challenges. We must enhance our understanding of environmental changes by considering the environment and human society as interactive systems to develop effective pathways tackling such challenges and benefiting from opportunities of transformation. Taking the 2050 net-zero target in Taiwan as an example, decarbonization of electricity generation, fuel shifting in transport, energy efficiency in industries, and increase of natural carbon sink are taken as four key pillars of developing pathways toward decarbonization future. In addition to technology innovations, challenges and opportunities in our environment and society will be followed during such transformation. We must consider social justice, policies, financial tools, and public communication to reduce societal impacts and risks with better strategies of stakeholder engagements.

In recent years, a new era of the TDR for sustainable development in Taiwan began through policy, research projects, and various initiatives. On the funding resources, the Ministry of Science and Technology has a Sustainable Development Discipline that focuses on promoting and granting "Integrated Research Project for Sustainable Development". In 2019, we reformed a new five-year plan by holding scoping meetings with more than 130 attendees to collect views from different stakeholders, social, and natural scientists. It emphasizes how to implement the TDR approach into research projects to deliver pathways and knowledge for solving local problems and toward sustainable development.

In addition to academic research, how to bring knowledge into effective actions often requires iterative tasks due to the complexity of local problems and barriers of institutions. In 2020, an initiative of the "Taiwan Sustainability Hub" (TSHub) was established with the aim to bridge science and policy, understand local needs and global perspectives, provide narratives and communications, and form systemic solutions. Several hub sites hosted by different universities joined in as the TSHub networking to work together for exercising TDR and solving sustainability problems. The talk will share our experiences of practicing the TDR pathway for sustainable development and looking forward to building international collaborations to overcome the challenges toward sustainability.

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