

Sustainability Science: Field Methods and Exercises

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Editors

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 Springer

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Preface

The last couple of decades have seen a fundamental shift in how society perceives it should prepare for the future, giving rise to the discipline of sustainability science. Since the issues we are facing today are highly complex, such as climate change and difficulty in meeting the rising energy demands while not harming the planet, it is important that they are dealt with in an interdependent and holistic manner. Inevitably, this requires academia to undergo a transformation from following a sectionalized approach to the one where different disciplines and fields collaborate together, essentially a transdisciplinary approach.

Since establishing the Integrated Research System for Sustainability Science (IR3S) in 2005 and the Graduate Program in Sustainability Science (GPSS) in 2007, the University of Tokyo has become a widely recognized leader not only in advancing sustainability research, but also in attempting to apply in practice the findings from such research. Building on the foundations and progress forged by the IR3S and GPSS, “the Graduate Program in Sustainability Science-Global Leadership Initiative (GPSS-GLI)” was established in 2011 to advance the field of sustainability science by aiming to train the next generation of “global leaders”. Such leaders should be characterized as individuals that are not only highly specialized in their own fields, but also have extensive knowledge of a variety of other disciplines and are guided by ethically sound principles. Essentially, GPSS-GLI is one of the nine competitive degree programs within the University of Tokyo that is being supported by “Program for Leading Graduate Schools” initiative funded by Japan’s Ministry of Education, Culture, Sports, Science and Technology (MEXT). As a collaborative effort between the Graduate School of Frontier Sciences and the United Nations University (UNU), GPSS-GLI combines the educational resources and international research networks of these leading institutions and thereby provides participants with the training and opportunities necessary to become global leaders.

One of the key elements in the GPSS-GLI program to train “global leaders” is to provide students with ample opportunity to experience the reality in the field, framed around Global Field Exercise (GFE) and Exercises on Resilience (ER). The exercises not only help students broaden their horizons and attempt to

holistically understand problems and develop solutions, but also serve to develop general methodologies that students and sustainability science practitioners can use in the field. This book attempts to summarize some of the experiences in running these GPSS-GLI courses and showcase other field works that GPSS-GLI students have undertaken as part of their formation as sustainability science leaders.

We hope that the book will serve as a good source of background information for those who wish to conduct field exercises in sustainability science, by illustrating the type of research that is possible, and inspire others to continue to develop conceptual and practical ways of conducting such work.

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Contents

Part I Theories, Concepts and Methodologies in Sustainability Science

Philosophy of Field Methods in the GPSS-GLI Program: Dealing with Complexity to Achieve Resilience and Sustainable Societies 3
Takashi Mino, Miguel Esteban, Vivek Anand Asokan,
Niranji Satanarachchi, Tomohiro Akiyama, Izumi Ikeda
and Chiahsin Chen

Part II Global Field Exercises

Designing Field Exercises with the Integral Approach for Sustainability Science: A Case Study of the Heihe River Basin, China. 23
Ricardo O. San Carlos, Heng Yi Teah, Tomohiro Akiyama and Jia Li

Field Survey Key Informant Interviews in Sustainability Science: Costa Rica’s PES Policy of Changing Focus from Quantity to Quality 41
Doreen Allasiw, Yuki Yoshida, Giles Bruno Sioen, Rene Castro,
Ying Palopakon, Toshinori Tanaka, Toru Terada, Akiko Iida
and Makoto Yokohari

Part III Exercises on Resilience

Assessment of Fieldwork Methodologies for Educational Purposes in Sustainability Science: Exercise on Resilience, Tohoku Unit 2015. 67
Ricardo O. San Carlos, Olga Tyunina, Yuki Yoshida, Aimee Mori,
Giles Bruno Sioen and Jiaqi Yang

Drawing Lessons from the Minamata Incident for the General Public: Exercise on Resilience, Minamata Unit AY2014 93
Eri Amasawa, Heng Yi Teah, Joanne Yu Ting Khew, Izumi Ikeda
and Motoharu Onuki

Part IV Sustainability Science Field Research

Sustainability Science as the Next Step in Urban Planning and Design	117
Giles Bruno Sioen, Toru Terada and Makoto Yokohari	
A Methodology to Evaluate Sustainability in the Face of Complex Dynamics: Implications for Field Studies in Sustainability Science	137
Niranji Satanaratchchi and Takashi Mino	
Sustainability Field Exercises in Rural Areas: Applying the Community Marginalization Framework to Examine Qualitative Changes in Rural Communities	153
Shogo Kudo	
Participatory Mapping and Problem Ranking Methodology in the Research of Sustainable Communities—Workshop with Indigenous People Under Community-Based Forest Management Program in the Philippines	177
Marcin Pawel Jarzebski	
Rapid Sustainability Appraisal of Collapsed Jatropha Projects in Ghana Using Local Community Perceptions: Methodological Implications for Sustainability Science	199
Abubakari Ahmed and Alexandros Gasparatos	
Index	229