

**Topic-Setting Program to Advance Cutting-Edge  
Humanities and Social Sciences Research**  
(Area Cultivation)

**Progress Report**  
(Summary of Final Report)

[Advanced and integrated research about social implementation of bio and environmental technologies—the vision and trial for the participation in 21th century]

**Core-Researcher:** Matsuda Tsuyoshi

**Institution:** Kobe University

**Academic Unit:** Graduate school of Humanities

**Position:** Professor

**Research Period:** 2017 – 2020

## 1. Basic information of research project

Research Area	Research Area B : The concept of the 'responsible research and innovation', and theoretical and practical deepening of 'science for society'
Project Title	Advanced and integrated research about social implementation of bio and environmental technologies—the vision and trial for the participation in 21th century
Institution	Kobe University
Core-Researcher (Name, Academic Unit & Position)	Matsuda Tsuyoshi, Graduate school of Humanities, Professor
Project Period	2017 – 2020
Appropriations Plan (¥)	2017 2,925,000 JPY
	2018 4,972,500 JPY
	2019 4,095,000 JPY
	2020 1,170,000 JPY

## 2. Purpose of research

The purpose of this project is to reform the expertise of humanities and social sciences relevant to life and environment by joint research with life- and environmental scientists. Some of the members of this project has been participated with Japanese civil movements by the victims of environmental pollutions etc. Through reconstruction of participatory types of method such as deliberative workshops or science cafe, we try to make humanities and social sciences more fitting for technological society in the 21st century. This is proposing not only ethical and healthy, but also economically suitable conditions for reproductive and environmental technologies. Naturally this issue is related with the responsibility of corporate activities, creative design of legal and social systems, and the ethical higher education in the whole perspective.

SAWA Takamitsu indicates the crisis of expertise of humanities and social science in his book *Recommendation for Economics or Rehabilitation of Humanities and Critical Spirit* (2016 in Japanese); how should the research and education of Japanese universities respond to socially important problems? When looking back upon the situation of the society, this question is really serious. Especially in the cases of threatening lives and safeties of the people the responsibility of scientists is decisive. It is still fresh in our memory that the accidents of the Fukushima Daiichi nuclear power plants in 2011 cased the distrust to experts. While it remains difficult for many citizens to have the correct knowledge of expertise and risk recognition about technologies, the situation around the expertise of humanities and social science is so diffuse that we are forced to ask what it is essential in humanities and social science in the ambiguous borders of laypersons and experts in our time, as we see the abundant information in books, on the internets and SNS.

With this crisis consciousness this project aims to establish the style of the expertise for this situation in the knowledge based society through joint deliberation mixed with life- and environmental scientists besides experts of humanities and social sciences. The topics are the problems of social implementations of “genome editing” both in reproductive medicine and agriculture and the renewable energies in the climate crisis after the Paris Agreement which are relevant to political-economy and normative ethics including laws. This project promotes a

sort of transdisciplinary research of the humanities and social science to make a practical model.

Since November in 2016 “Meta science and technology research project” of Kobe University has had open workshops WMST. This project mainly makes use of this in which we have [1] surveys of the contemporary situations of the problems and similar researches in the context of citizen participation facing with life- and environmental technologies, [2] reexamining and updating the theoretical frameworks of the project based on case studies from the multiple viewpoints of humanities and social sciences, [3] proposals for the responsible science and technology by public outreach like book publication in English and producing the teaching-tools or materials for higher education by the style of deliberative workshop and so on.

### 3. Outline of research (Including study member)

We had 56 workshops of WMST. The speakers are about 80 persons in sum, domestic and foreign scholars, researcher in company, lawyer, journalist and activists of NPO in addition to the scientists of humanity and social science. Above said, the research was done in three steps; [1] surveys, [2] theoretical discussion and [3] public outreach. While exhibiting the contents of WMST by (<http://www.lit.kobe-u.ac.jp/mst/>), we published papers in the *Journal of Innovative Ethics* ([http://www.lib.kobe-u.ac.jp/kernel/seika/NCID=AA\\_12350231.html](http://www.lib.kobe-u.ac.jp/kernel/seika/NCID=AA_12350231.html)). In order to internationally position the project and to make it develop, we published also a book with colleagues of UK, Germany, and China invited for workshops, besides the direct appeal to the public by the lecture or international exchanges about the issues as genome editing, asbestos hazards and so on.

Roles	Name	Affiliation • Position	Parts
Leader	Matsuda Tsuyoshi	Kobe University, Graduate school of Humanities, professor	Environmental Ethics
Group Leader	Tsukahara Togo	Kobe University, Graduate school of Intellectual Studies, prof.	STS
Group Leader	Ito Masayuki	Kobe University, Graduate school of Development and Environment, prof.	Civil Participation
Researcher	Yanagawa Takashi	Kobe University, Graduate school of Economics, prof.	Economics
Researcher	Hoshi Nobuhiko	Kobe University, Graduate school of Agriculture, prof.	Risk Analysis
Researcher	Takahashi Hiroshi	Kobe University, Graduate school of Law, prof.	Reproductive Law
Researcher	Chatani Naoto	Kobe University, Graduate school of Humanities, prof.	Medical Ethics
Researcher	Naka Mao	Kobe University, Graduate school of Humanities, associate prof.	Gender and reproduction
Researcher	Ishikawa Masanobu	Kobe University, Graduate school of Economics, prof. emeritus	Social Experiment
Researcher	Yamazaki Juichi	Kobe University, Graduate school of Technology, prof.	Design
Researcher	Kadomatsu Narufumi	Kobe University, Graduate school of Law, prof.	Environmental Law
Researcher	Ohsawa Teruo	Kobe University, Graduate school of Marine, prof.	Wind power Generation
Researcher	Haraguchi Takeshi	Kobe University, Graduate school of Humanities, associate prof.	Urban geography
Researcher	Ishi Tetsuya	Hokkaido University, Office of Health and Safety, prof.	Reproductive Technology
Researcher	Otsuka Jun	Kyoto University, Graduate school of Letters, associate prof.	Philosophy of Science
Researcher	Nagamatsu Yasuko	St. Luke's International University, associate prof.	Care
Researcher	Murayama Takehiko	Tokyo Institute of Technology, School of Environment and Society, prof.	Impact Analysis
Researcher	Fujiki Atsushi	Kobe City College of Nursing, associate prof.	Engendering Ethics
Researcher	Yagishita Masaharu	Institute for Dialogue of Environmental Policy • Research Leader	Environmental Policy

#### 4. Research results and outcomes produced

The core members of this project are from philosophy, ethics, geography, economics, law, and STS with practical mind. The aim of the research is seen as achieved not only by their personal achievements but also by the publications of WMST by a book and papers. It is expected as an effect of it that each member newly develops their research and education by transporting of the methods and issues into their home grounds with some feed backing. For example, they can contribute to SDGs by action research for undergraduate education of faculties. The result will be activated for the “risk hedge” of the problems related with social implementation of new technologies. As a matter of fact, three younger researchers now join “Meta science and technology research project” of Kobe University to promote this type of transdisciplinary researches. And we also utilize the following book for further international collaboration as a model. The table of contents of *Risks and Regulation of New Technologies* (Springer,2021):

##### Part 1. Socio-humane Sciences of New Technology

1. *Wolff* (Oxford) : Risk and the Regulation of New Technologies
2. Matsuda : The Gradation of the Causation and the Responsibility: focusing on “Omission”
3. Otsuka : Ockham’s Proportionality: A Model Selection Criterion for Levels of Explanation

##### Part 2. Reproductive Technology and Life

1. Ishi : Enforcing Legislation on Reproductive Medicine with Uncertainty via a Broad Social Consensus
2. Yan&Kang (Dalian) : Gene Editing Babies in China: From the Perspective of Responsible Research and Innovation
3. Itamochi (Kobe) : Posthumously Conceived Children and Succession from the Perspective of Law
4. Chyatani : Aristotle and Bioethics
5. Naka : Reinterpreting Motherhood: Separating Being a “Mother” from Giving Birth

##### Part 3. Environmental Technology

1. Ott (Kiel) : Domains of Climate Ethics Revisited
2. Yanagawa : Electricity Market Reform in Japan: Fair Competition and Renewable Energy
3. Takeuchi, Miyamoto : Renewable Energy Development in Japan
4. Hoshi: Adverse Effects of Pesticides on Regional Biodiversity and Their Mechanisms
5. Fujiki: Reconsidering Precautionary Attitudes and Sin of Omission for Emerging Technologies: Geoengineering and Gene Drive

##### Part 4. Science and Society

1. Kawamura, Shineha, et al (Osaka) : Exploring the contexts of ELSI and RRI in Japan: Case Studies in Dual-Use, Regenerative Medicine, and Nanotechnology
2. Tsukahara : Global Climate Change and Uncertainty: An Examination from the History of Science

This project produced relatively a lot of papers as a research project of humanities and social sciences in a short period, because 19 experts participate including natural scientists. The number of the accomplishments reaches 223papers (127papers with referee, 29international collaboration papers, 144open accesses), 51works, and 206lectures (66invitation lectures, 78international societies). While the COVID-19 pandemic was regrettably an obstacle in [3] in 2020 for beginning a new joint research and educational trial across boundaries about the same subject, we extended the scope of research to the problems of COVID-19 such as vaccination and the public

health or risk analysis and related laws from in 2020. Additionally from WMST the possibilities are opened to collaborate with a sociologist of family concerning about the social alternatives of the reproductive technology like genome editing and to begin a new project of engendering ethics with research-aids in B of JSPS as a “spin-off” project. Moreover, some of the members of this project plans a summer school for Japanese association of the applied philosophy, “Introduction for Applied Philosophy as Advanced and integrated Research” in September 2021.