Social Systems Lab

Learning report 2020-23

BACKGROUND

Why a Social Systems Lab?

The world grapples with complex societal issues like climate change, COVID-19, and inequity, demanding a systemic approach. The Institute of Environmental Science and Research (ESR) vision is to protect the safety, health, and wellbeing of Aotearoa New Zealand's communities. ESR, focusing on environmental and public health, food safety, forensic science, and radiation safety, acknowledges the critical importance of systemic thinking.

The Social Systems Lab at ESR integrates systems thinking and social science to collaboratively address complex challenges. This initiative explores applied social systems methods to foster innovation, and guides partners in practical systems thinking. Initially funded through the ESR Strategic Science Investment Fund (SSIF) from the Ministry of Business, Innovation and Employment (MBIE), the Social Systems Lab remains the focal point for the Social Systems team's work, advocating for the widespread use of systems approaches within and beyond ESR.

We are a multi-disciplinary team of social researchers with diverse experience and expertise.

Social justice and equity	Sustainability/ SDGs	Research impact
Qualitative research	Ethics	Co-design
Systems thinking	Trans- disciplinarity	Bicultural research
	Kaupapa Māori	

OUR TEAM
2020-2023

Helena Rattray
Jinny Baker
Maria Hepi
Mat Walton
Sudesh Sharma
Suzanne Manning

VISION AND MISSION

Vision:

Support science to have impact for communities

Mission:

Work collaboratively to design research with iwi, hapū, government and communities, to benefit those who partner with ESR.

The Social Systems Lab (SSL) aims to be a space where transdisciplinarity, systems thinking, and multiple perspectives come together to collaboratively undertake problem structuring and identify systemic solutions to specific areas of work or research. The SSL aims to grow as a learning lab and become a leader and influencer in systems thinking, co-design and in the transdisciplinary research space.

Summary of our key achievements 20-23

Conducted systems thinking based problem structuring workshops with a range of ESR's science teams (forensics, biowaste, groundwater, health) and explored potential research problems

Led establishment of a cross CRI social science network, including exploring ethics processes

Discussed SSL with stakeholders and at conferences regularly, exploring transdisciplinary and systems science approaches

Co-edited a special issue on systems thinking & complexity in evaluation, published peer-reviewed articles about methods and process innovations

Developed collective capability by taking online systems thinking courses as a team, and structured reflections on how we can decolonise our own research practices

Supported teams and partners, including ESR transdisciplinary research teams and the cross-CRI Impact Network (iPEN), to utilise systems thinking in their endeavours

Explored synergies among systems thinking, transdisciplinary, and Kaupapa Māori research approaches

Our year in brief: 2020-21

Method exploration

Realist review + systems mapping
Critical systems thinking + co-design
Systems + mātauranga Māori
Transdisciplinary research
System effects mapping

Problem structuring

Scoping Forensic Investigative Genetic Genealogy, Medicinal Cannabis system

Systems mapping support to MoH Climate Change Group

Team capability development

Team training- Mastering Systems Practice

Online collaborative tools: Kumu, MIRO

ESR Social Systems team history project

Networks, relationships

SDG Alliance

Para Kore

Whitireia/Weltec

iPEN

Cross-CRI social science network

Conference presentations

System Dynamics Society (x2)
International Systems Science (x1)
Australian Evaluation Society (x2)

Peer reviewed publications

Realist review protocol
Critical collaboration model

Social and community impact

Research sharing seminars: Welly Zero waste network, Whitireia/Weltec

Proposal development with Para Kore on Kope Toitū/ Cloth Nappies

Monitoring, evaluation and learning

Three team wānanga for planning and reflection

Learning reflection document

Our year in brief: 2021-22

Method exploration

Realist review + systems mapping

Kaupapa Māori-aligned Q methodology

Kaupapa Māori-aligned Rich picture- Te Haerenga

Problem structuring

with Climate Change Group

Team capability development

Team book club - Decolonising methodologies

Network, relationships

Healthy Families Christchurch

Para Kore

iPEN

Te Whatū Ora Canterbury

Conference presentations

System Dynamics (x2)

New Zealand History Association (x2)

Antipodean Perspectives on Responsible Innovation, Cross-CRI panel

Peer reviewed publications

Realist review report- waste minimisation

Social and community impact

Collaborative proposal development with Healthy Families Christchurch and Community and Public Health, Christchurch

Monitoring, evaluation and learning

Three team wānanga for planning and reflection

Learning reflection document

Ripple Effect Mapping

Our year in brief: 2022-23

Method exploration

Realist review + systems mapping

Kaupapa Māori-aligned systems methods: Q methodology, causal loop diagram, Rich picture

Kaupapa Māori-aligned monitoring, evaluation and learning approaches

Problem structuring

Our Land and Water partners

Te Whatū Ora Canterbury

Team capability development

Developmental evaluation: ripple effects mapping, outcome harvesting

Reflection on decolonising research practices

Network, relationships

Healthy Families Christchurch

Para Kore

iPEN

Te Whatū Ora Canterbury

University of Otago

Conference presentations

NZ Geography Society (x2)

Public Health Observatory NZ

Thoracic Society of Australia & NZ

Peer reviewed publications

Realist review report- waste minimisation

Social and community impact

Collaborative proposal development with Healthy Families Christchurch and Community and Public Health, Christchurch

Monitoring, evaluation and learning

Team wānanga for planning and reflection

Learning reflection document

Learning and reflections

1. Continued journey as a learning team

Our team has been learning together in the lab's key areas for three years. We've focused on sharing, reflecting, and learning from our experiences, especially in ongoing work and understanding how to decolonise our research methods. Documenting our learning has helped us reflect on our research practices.

Even after finishing this project, we'll keep learning and reflecting through documentation. Along the way, we'll figure out priorities and activities for the Social Systems Lab that match our vision and mission.

SSL has given the team time to read Linda Tuhiwai-Smiths book Decolonising Methodologies as a team and do team reflections together to learn off each other. (Reflection during Ripple Effect Mapping)

Learning and reflections

2. Strengthened space for research co-design and critical collaboration

With guidance from our Māori partners and the ESR Māori Impact Team, we strengthened our capabilities around Kaupapa Māori-aligned Monitoring, Evaluation, and Learning approaches. This supports projects guided by tikanga, such as He Wai Māpuna, the Kope Toitū project with Para Kore, and the Ōhanga Āmiomio Project. Team members have shared, learned, and documented various Kaupapa Māori-aligned approaches that support Te Tiriti o Waitangi.

The Social Systems Lab has been a unique and transformative learning opportunity for our team. We continue to expand ways for collaborators to engage with us, both online and face-to-face. This brings together the strengths of both Western and te ao Māori perspectives in research, monitoring, and evaluation.

Sudesh [from Social Systems Lab] has been a great support to the evaluation of our kope toitū pilot, working alongside kaiārahi involved in this. – Jacqui Forbes, Kaihautū Matua, Para Kore

Learning and reflections

3. Social Systems science methods and process innovation

As a part of our Social Systems Lab work, we have blended traditional qualitative research with soft systems methods like rich picture and CATWOE, Q-methodology, and causal loop diagramming as well as adapting those methods for a tikanga Māori setting. Our Māori partners guide us as kaitiaki and knowledge holders.

One good example is 'Te Haerenga' or Journey map, created through discussions between a social scientist and a Kaupapa Māori researcher. This approach, based on te ao Māori, reflects on a journey with Māori values using the rich picture process – a free-hand drawing showing key elements and interactions like structures, processes, conflicts, or ideas. Through collaboration, we developed a template with te ao Māori prompts, capturing a journey that suits both scientists and Māori partners in the project.

> The [Systems thinking] methods were well received by our Māori collaborators as well as by the science team, and all of the project team appreciated the benefits of the methodology. They also opened up the conversation, amongst the Māori collaborators, to use some te ao Māori methodology, which could be complemented by System methods, including some whakaaro Māori or some Māori frameworks, which we hadn't been able to bring up in the past. – Maria Gutierrez-Gines, Technical Lead (Wastewater, Biowaste and Microplastics)

Learning and reflections

4. Strengthened network and partnership for impact

Through the Lab, our Social Systems Team has been building and strengthening connections with various partner organisations, networks, and collaborators. This includes iPEN, the cross-CRI social science network, Para Kore, Whiteria/Weltec, and establishing a new relationship with Healthy Families Christchurch and Te Whatū Ora Canterbury to advance our research impact goals.

The Lab has actively supported the cross-CRI Impact Planning and Evaluation Network (iPEN). We have engaged in systems thinking-based research and analysis to uncover barriers and opportunities for accelerating science impact. As a result, the Social Systems Lab has contributed to the creation of a systems diagram, such as a Causal Loop Diagram embedded in an Iceberg Model for identifying leverage points for action.

We simply couldn't have completed systems analysis to understand barriers and enablers of research impact without having systems experts in the team and Sudesh was critical to the success of this, which we are using as a powerful 'tool' to help progress conversations with other systems actors around how we can collectively increase impact from research.- Kara Scally-Irvine, iPEN Consultant

Learning and reflections

5. SSL as a driver of systems thinking and leadership

The Lab remains a force for systems thinking and leadership in the science sector by teaming up with other labs and societies. We've sought guidance from the Waters Center for Systems Thinking and joined groups like the System Dynamics Society and the Australian Evaluation Society.

Within ESR, we're boosting scientists' skills in systems thinking and leadership, encouraging engagement and innovation. The team shares valuable insights through blogs, guest lectures, and orientations to systems approaches.

What next for the Lab?

While the funding for the lab has ceased, the social systems team members continue to progress the Lab's strategies and roadmap for science impact:

Four key interdependent IMPACT areas of the lab:

- Sustainability
- Social justice
- Ethics
- Wellbeing

Four core APPROACHES central to our action and practices:

- Transdisciplinarity
- Systems Thinking
- Critical collaboration
- Kaupapa Māori aligned approach

Addressing COMPLEX SYSTEMIC ISSUES such as:

- Responsible Artificial Intelligence
- Community capacity to act on environmental issues
- Mitigating Health inequities
- Impacts of Climate change on wellbeing
- Culturally and ethically appropriate genomics

Science for Communities
He Pūtaiao, He Tāngata
SOCIAL SYSTEMS LAB