<<Taikichiro Mori Memorial Research Fund>>
Graduate Student Researcher Development Grant
Report for Research Project
"Implementing Interlinkages for Sustainable Development: An Interdisciplinary Approach"

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1 Background

The concept of sustainable development is characterised by integrating the social, economic and environmental dimensions (Griggs et al., 2013; Kates et al., 2001; Kates et al., 2005). After more than twenty years of sustainable development being deliberated within the political and international arena, however, there has been little progress towards integrating these three fields (Jordan, 2008). With the Sustainable Development Goals (SDGs) now agreed by all United Nations member states, investigating how to operationalise policy integration has become a significant research and policy objective. This research project seeks to investigate the implementation of interlinkages through the SDGs. Specifically, it looks to understand the interlinkages of deforestation with other development goals (such as with climate change, health, economy, etc).

Two main components are considered. Firstly, *functional linkages*, interconnected areas in our nature across biophysical and/or socioeconomic areas, are identified. With this in mind, this research project focuses on investigating the functional interlinkages of land use change (forest cover) in Malaysia as its scope.

Secondly, with *implementation* of interlinkages the focus of this research project, the institutional interlinkages (i.e. how government and social institutions and agencies are arranged) are investigated. Defined as *political linkages* (Young, 2002), the challenge of breaking down institutional silos is a significant research and policy agenda in governing for sustainable development over the years. However, a systematic understanding of how institutions interact, and in particular, the reasons behind those interactions (or lack of) is still not widely understood.

In essence, the work on functional linkages demonstrates *why* institutions should interact, by identifying the interlinkages that occur across fields while the understanding of *how* institutions interact is identified under political linkages (Gehring & Oberthür, 2004; Gehring & Oberthür, 2009; Stokke, 2008). Combined, this interdisciplinary research framework will attempt to understand both *why* and *how* to address interlinkages of deforestation with other policy areas and development goals.

2 Research questions and objectives

1) What are the key interlinkages, including the drivers and impacts, of land use change (forest cover) in Malaysia?;

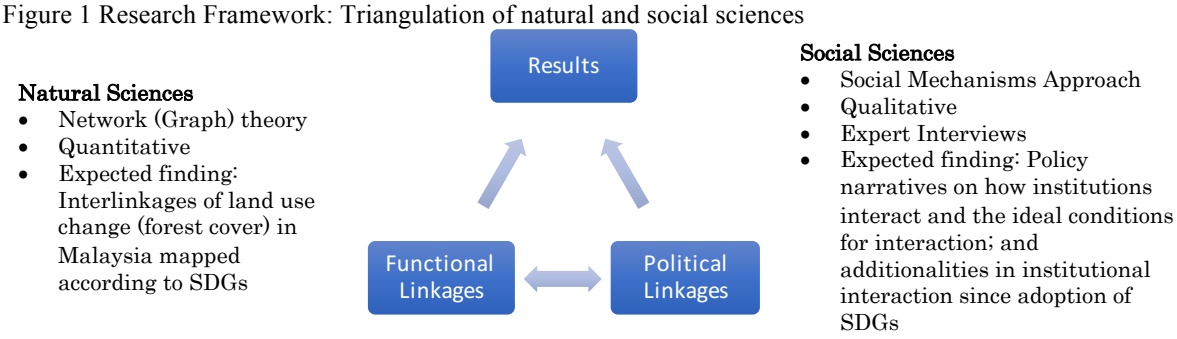
2) How do you increase interaction amongst institutions responsible for the identified interlinkages? and;

3) What are the additionalities in practices of institutional interaction since the adoption of the SDGs?

3 Methodology

Due to the fact that the research project covers both natural and social sciences, an interdisciplinary approach is utilized with a triangulation of both the sciences as well as quantitative and qualitative approaches. Firstly, identification of the functional linkages is undertaken by adopting a network analysis approach, which is a quantitative approach based on graph theory. Derived from a branch of discrete mathematics, it analyses connections through defining and calculating the relationship between nodes including its centrality and degree (Barnes & Harary, 1983; Hafner-burton et al., 2009; Harju, 2011). To further understand and verify the interactions of land use change, a simulation on land-atmosphere interactions will be undertaken in collaboration with the Japan Agency for Marine-Earth Science and Technology (JAMSTEC) by utilising the Earth Simulator. Secondly, understanding the political linkages, and more specifically, how institutions interact is then undertaken by adopting the social mechanisms approach, a social theory analytical approach that seek to explain observed association between events (Gehring & Oberthür, 2009; Hedstrom & Swedberg, 1998; Mason et al., 2013) by identifying mechanisms for institutional interaction through expert interviews.

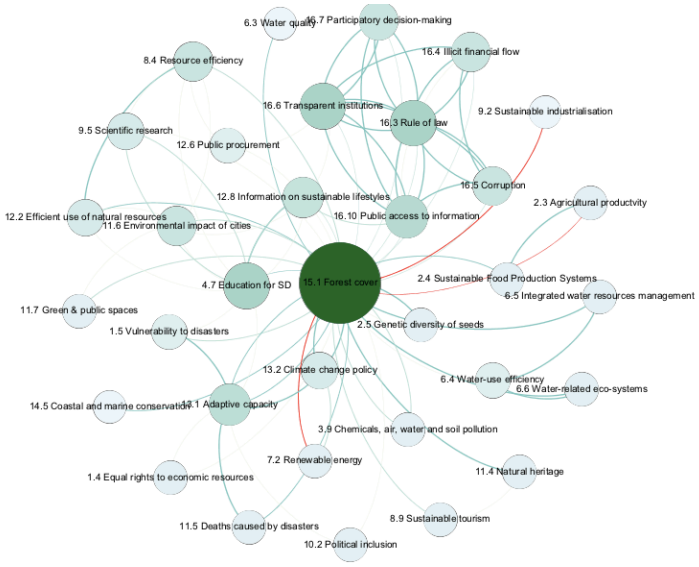
Figure 1 Research Framework: Triangulation of natural and social sciences



4 Preliminary Results

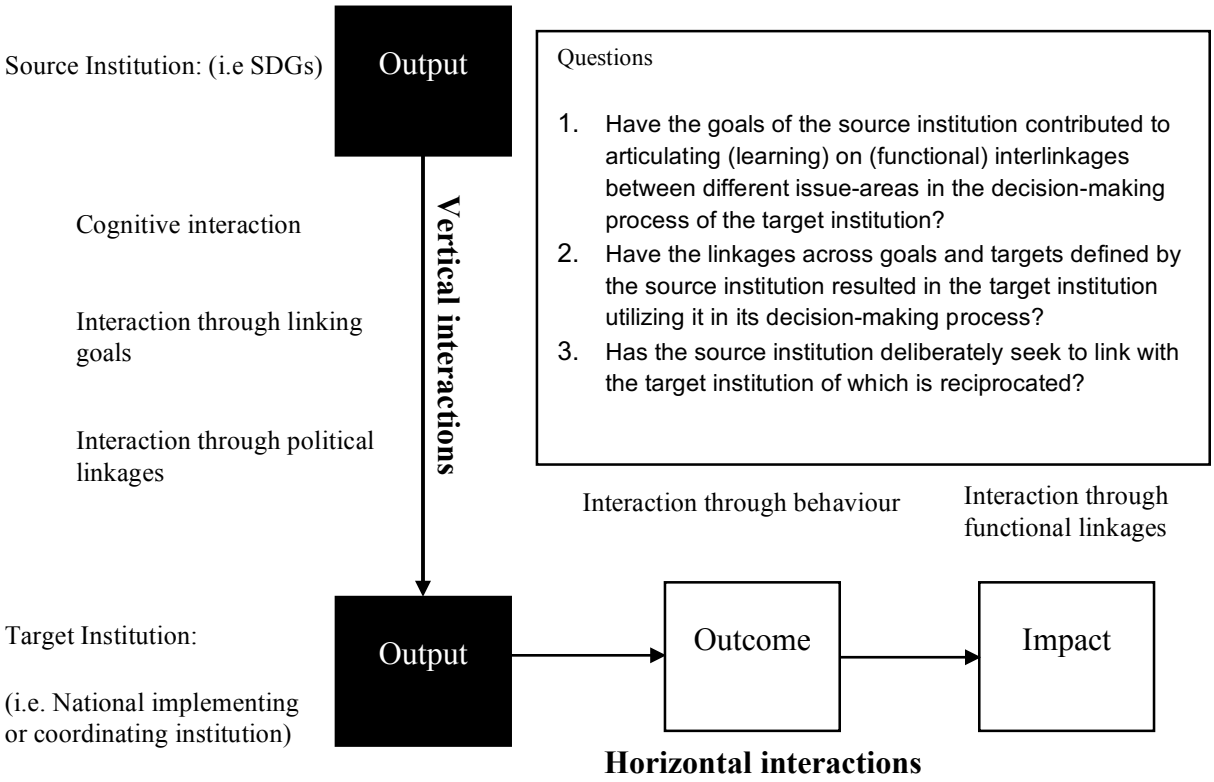
In terms of the functional linkages, a network analysis tool is used to depict and map the interlinkages with different areas under the SDGs (Figure 2). Further scientific inquiry on the interlinkages of deforestation in Malaysia is being undertaken in collaboration with the Japanese Agency for Marine-Earth Science and Technology (JAMSTEC) (see Research Activities section).

Figure 2 Functional Linkages: Drivers and impacts of Land Use Change (Forest Cover) in Malaysia



In terms of the political linkages, a conceptual framework (see Figure 3) to understand institutional interactions is established and presented at an international conference (see Research Activities) with positive feedback. Using this framework, this research will be continued to understand what are the conditions and forces for institutional interactions.

Figure 3 Conceptual Framework for Systematic Analysis of Institutional Interaction for Goal setting



5 Research Activities

The concrete research activities undertaken are described below, some of which are kindly supported by Taikichiro Mori Memorial Research Fund: -

5.1 International Conferences

1. International Conference on Research and Development 2017 (ICRD 2017), Bern, Switzerland, 5-8 September 2017

Delivered a paper presentation entitled "Fostering integration through SDGs: Framework for understanding mechanisms for national institutional interactions" on a panel session on "Addressing multiple SDGs: The relevance of multisectoral approaches for sustainable development". ICRD is a prestigious conference that brings together academia with practitioners, international organisations and civil society organisation leaders.

2. The 5th Integrated Land Ecosystem-Atmosphere Processes Study (iLEAPS) Science Conference, Oxford, United Kingdom, 11-14 September 2017 (international conference)

Presented a poster on "Interactions between Land and Atmosphere: Knowledge utilisation of Regional Climate Models (RCM) at the local level". The presentation is related to the minor research for GESL. iLEAPS is a programme of Future Earth and the leading global network on addressing ecosystem-atmosphere interactions.

3. International Conference on Sustainable Cities, Communities and Partnerships for Sustainable Development Goals 2017 (SCCP2017), Kuala Lumpur, Malaysia, 5 – 7 October 2017

Presented a conference paper on "Institutional Interaction in Cities: Balancing Global Governance with Local Assemblages". The paper was co-authored with Vuk Radovic, also a GESL RA, as a research collaboration.

4. 2017 Lund Conference on Earth Systems Governance, Lund, Sweden, 9-11 October 2017 (international conference)

Delivered two paper presentations: i) Why and how do institutions interact? Causal mechanisms and ideal conditions for national SDGs implementation "; and ii) From Integration to Inter□linkages: Tools for national SDGs Implementation. Earth System Governance is a programme of Future Earth and a leading network on addressing issues of governance of and for sustainable development and socio-ecological systems.

5.2 Expert Interviews

1. Multi-stakeholder meeting to present research framework, Kuala Lumpur, 1 June 2017

In the aim for co-design of research framework, consulted mulita-stakeholders by organizing a discussion with multi stakeholders in Kuala Lumpur, Malaysia.

Discussion on "Fostering Integration through SDG Interlinkages: Framework for Understanding Mechanisms for National Institutional Interactions"

1st June 2017 | 3.30pm – 5.30pm | Yayasan Hasanah, 27th floor of Mercu UEM

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Key words: Interactions, interlinkages, SDGs, institutions, integration

The 2030 Development Agenda calls for an integrated package with the goals and targets indivisible from one another. However, in reality, the functional linkages, interdependencies amongst biophysical and/or socioeconomic areas, are often not reflected in the political linkages, the deliberate linkages created by actors to achieve certain goals. Recent scholarly work on understanding the functional linkages, via the nexus approach and others, has demonstrated why institutions should interact with one another. A systematic understanding of how institutions interact, and in particular, the reasons behind those interactions (or lack of) have received less attention.

This paper presentation offers a discussion in understanding how to bridge the gap between the functional and political linkages. With national governments being the critical nodes for implementation, a framework to study the causal mechanisms of how influence travels from one institution to another is applied to a case study at the national level on efforts of mainstreaming biodiversity conservation in Malaysia. Identifying examples of success and otherwise, the findings suggest that the ideal conditions for institutional interactions differ greatly based on a range of factors including whether interactions occur in both directions, the ownership structure of the resources involved, budget allocation and hierarchy in national development priorities. Cognisant of the fact that interactions are context specific, it is argued that while the SDGs provide a useful cognitive mechanism to identify policy relevant functional linkages, a more nuanced understanding of the drivers behind political linkages at the national level is required.

A framework for a systematic understanding of institutional interactions, which allows for the identification of potentially synergistic interlinkages as well as understanding the underlying drivers in disruptive relationships, is proposed. While the framework focuses on interactions between a limited number of issue-areas, it provides an incremental approach that identifies synergistic clusters of strongly interlinked policy domains as an incremental and pragmatic step towards fostering greater integration.

To RSVP kindly email: ainunjaabi@gmail.com *Organised by Malaysian CSO-SDGs Alliance*

2. Fieldwork 2: Interviews and Focus Group Discussion, Kuala Lumpur, 30 December 2017

Conducted a focused group discussion with civil society leaders in Malaysia as input into the research framework. This was done in collaboration with the CSO SDG Alliance of Malaysia as well as the United Nations Global Compact.

5.3 Interdisciplinary internships for functional and political linkages

1. Functional Linkages: Research Collaboration with JAMSTEC, January – March 2018

In order to understand the complex interlinkages of deforestation and the climate, and interactions between land and atmosphere, a period of internship is currently being undertaken at the Japanese Agency for Marine-Earth Science and Technology (JAMSTEC). The will provide various scenarios of the impact of deforestation to the local climate, and as a consequence, impact to other development goals, such as vulnerability disasters (i.e increased risk of flood or droughts), health (i.e. increased threat of malaria due to warming), food and agriculture and others.

2. Political Linkages: International training at University of Massachusetts (UMass) at Amherst, April-June 2018
To address the political linkages and institutional interactions component, an international training will be undertaken at UMass Amherst with Professor Peter M. Haas, one of the leading authorities in international relations globally, as well as global environmental governance. This future training will provide

6 Expected Future outcomes

The expected outcomes can be divided into both theoretical contribution to the area of interlinkages as well as empirical evidence. Theoretically, 1) an interdisciplinary conceptual framework to assess institutional interactions will be established. Empirically, 2) the interlinkages of land use change (forest cover) in Malaysia will be mapped according to SDGs; 3) mechanisms on how institutions interact identified and 4) additionalities in institutional interaction since adoption of SDGs will be identified. As can be seen from the progress report, items 1, 2 and 3 has seen significant progress. Item 4 will be further inquired through international training at UMass and further in depth interviews at the local level in Malaysia.

Beyond this, publications are currently being prepared for submission. In conclusion, this research has the potential to provide a significant contribution to understanding implementation of sustainable development policy by addressing interlinkages, and ultimately, provide a pathway to achieve the elusive integration of the three dimensions.