

An Indian-Australian research partnership

**Project Title:**

**THE GOVERNANCE OF PLACE-BASED TRANSITIONS TO CIRCULAR ECONOMIES IN THE GLOBAL SOUTH: COMPARING WATERBODY REJUVENATION INTERVENTIONS TO CIRCULAR ECONOMY IN INDONESIA AND INDIA**

**Project Number**

IMURA1029

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**Research Clusters:****Research Themes:**

<b>Highlight which of the Academy's CLUSTERS this project will address?</b> <i>(Please nominate JUST <b>one</b>. For more information, see <a href="http://www.iitbmonash.org">www.iitbmonash.org</a>)</i>		<b>Highlight which of the Academy's Theme(s) this project will address?</b> <i>(Feel free to nominate more than one. For more information, see <a href="http://www.iitbmonash.org">www.iitbmonash.org</a>)</i>	
1	<i>Material Science/Engineering (including Nano, Metallurgy)</i>	1	<i>Advanced computational engineering, simulation and manufacture</i>
2	<i>Energy, Green Chem, Chemistry, Catalysis, Reaction Eng</i>	2	
3	<i>Math, CFD, Modelling, Manufacturing</i>	3	<i>Infrastructure Engineering</i>
4		4	<i>Clean Energy</i>
5	<i>CSE, IT, Optimisation, Data, Sensors, Systems, Signal Processing, Control</i>	5	<b>Water</b>
6	<i>Earth Sciences and Civil Engineering (Geo, Water, Climate)</i>	6	<i>Nanotechnology</i>
7	<i>Bio, Stem Cells, Bio Chem, Pharma, Food</i>	7	<i>Biotechnology and Stem Cell Research</i>
8		8	<b>Humanities and social sciences</b>
	<i>Semi-Conductors, Optics, Photonics, Networks, Telecomm, Power Eng</i>		<i>Design</i>
	<b>HSS, Design, Management</b>		

## The research problem

### *Define the problem*

Rapid and unsustainable urbanization, industrialization, high population density, lack of adequate sanitation and waste management infrastructure and pronounced regulatory failure have led to rampant pollution of water bodies globally. In the context of developing countries, conventional centralized solutions to this problem fail on two accounts: high capital and energy costs, and lack of technical, financial and institutional capacity for most towns/cities nearby water bodies. This in turn has adversely affected public health, cities' resilience to climate change, making them more vulnerable to floods and droughts and lead to livelihood losses to dependent communities.

In the last decade, discussions on the circular economy model have gained momentum in the Global North, including in Australia. This discourse is centered around the idea of an alternative to the predominant take-make-dispose economic system and instead promotes restoration, regeneration, and recycling of material and energy, and the creation of associated new economic activities, jobs, and livelihoods. Furthermore, it is argued that circular economies cannot be achieved through incremental changes alone. Circular economy discourse emphasizes the need for transitions at the level of production and consumption systems: major shifts in technological, organizational, institutional, political, economic and socio-cultural dimensions.

Cities are experimenting with initiatives at the local level aiming at place-based transitions to sustainable circular systems. However, whether and how these initiatives can achieve their sustainability goals and have system-wide impacts is still largely unknown. There are also long traditions of waste picking and recycling in Global South cities and informal settlements, from which valuable lessons can be learned. However, scholarly analysis and governance recommendations through the lens of inclusive transitions to the circular economy are largely lacking. Therefore, some key questions that need urgent research include: What does a circular economy model in cities, informal settlements and rural areas look like? What are the local level interventions (technical, social, behavioral, institutional, organizational, economic) that can be adopted at city level to facilitate its transition to a circular economy? What are the governance mechanisms and role of institutions? What are the scope and challenges of such initiatives? What are the impacts of such initiatives on the waterbody ecosystem, community well-being and local economy?

## Project aims

### *Define the aims of the project*

This project focuses on understanding and improving the governance of place-based transitions to a circular economy through a comparative study of waterbody rejuvenation experiences and initiatives for transition to circular economy in Provinces of West Java in Indonesia (Citarum River) and the state of Kerala in India by Monash University and IIT Bombay. The project aims to understand: (i) the conceptual contours and success factors of a transition towards place-based and inclusive circular economy models in the Global South, with specific attention to decentralized and community-managed solutions in informal settlements and rural areas; (ii) the interventions and experiments, whether technical, social, behavioral, economic or institutional, and their impacts; (iii) the scope and challenges in attaining the transition, developing governance recommendations and enabling scale-up.

In this research the term 'water bodies' encompasses rivers and canals and the associated riverine communities. Local level river or canal rejuvenation efforts for waste management and sanitation anticipate outcomes for waterway restoration, waste reuse, decentralized waste management, climate change mitigation, improved sanitation services, and the enhancement of local economy through job generation and effective river governance. The impacts need to be measured, qualitatively interpreted and assessed to analyze the need for scaling up. A comparative case study between similar efforts in two countries helps explore the opportunities and barriers to applying a circular economy to specific contexts.

## Expected outcomes

1. Governance models for place-based transitions to a circular economy
2. Assess the institutional fit or evolving technology options and socio-behavioral solutions for solid and liquid waste management in cities/towns near the water bodies that facilitate both waterbody rejuvenation and transition of cities/towns towards circular economy
3. Understanding the institutional and governance challenges in implementation of the such solutions
4. Understanding the impact of integrative solutions on the waterbody ecosystem, community wellbeing and the local economy

*Describe how the project will address the goals of one or more of the 6 Themes listed above.*

It addresses the theme water and fills focus on two major issues: (a) Analysis of waste water, pollution and sanitation issues required for water body rejuvenation; (b) address issues of governance that are needed for a transition to sustainability through implementing circular economy models.

## Capabilities and Degrees Required

*List the ideal set of capabilities that a student should have for this project. Feel free to be as specific or as general as you like. These capabilities will be input into the online application form and students who opt for this project will be required to show that they can demonstrate these capabilities.*

1. Interdisciplinary degree like Master of Public Policy or M Tech (Technology & Development)
2. Demonstrated experience in working on issues related to circular economy and sustainability.
3. Experience working in West Java or Kerala

## Potential Collaborators

*Please visit the IITB website [www.iitb.ac.in](http://www.iitb.ac.in) OR Monash Website [www.monash.edu](http://www.monash.edu) to highlight some potential collaborators that would be best suited for the area of research you are intending to float.*

Select up to **(4)** keywords from the Academy's approved keyword list (**available at <http://www.iitbmonash.org/becoming-a-research-supervisor/>**) relating to this project to make it easier for the students to apply.

Waterbody rejuvenation, circular economy, waste management, sanitation, governance