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Mapping UNSW Impact
Global Development

Primary SDG	**6: CLEAN WATER AND SANITATION**
Broad theme	Removing plastic from rivers and oceans
Research	Supporting and instigating water and development-related research
Impact region	Global
Faculty	Engineering, Science, Law, Arts and Social Sciences, Medicine, Built Environment
School/Institute	Global Water Institute
Academic	Dr Andrew Dansie
Project partners	UNESCO, OECD, University of Oxford, University of Queensland, University of the South Pacific, Fiji National University, Australian Water Association
Related SDGs	14: Life Below Water, 3: Good Health and Well-being

Elevator pitch

To address the global plastic crisis, Dansie is part of team that is assessing human behaviour, waste management and terrestrial waterways to understand causes of the crisis and potential solutions to reduce the annual discharge of plastic to the world's oceans.

The Challenge: Plastics are polluting our oceans

There are 5.25 trillion pieces of plastic debris in the ocean, according to National Geographic. Of that mass, 269,000 tons float on the surface, while four billion plastic microfibers per square kilometre litter the deep sea. Microplastics in rivers and oceans enter the food chain causing negative health impacts on life and, ultimately, humans. This global issue demands a combined societal, engineering and ecological approach.

UNSW's solution: Develop monitoring systems, survey communities

Tackling global plastic pollution - including the presence of microplastics throughout our planet's environment and food chains – requires societal changes, engineering solutions and effective environmental management. GWI's approach is to address global plastic pollution at the river-basin level. This involves preventing plastic from entering the environment in the first place through intervention in human behaviour and addressing mismanaged waste management systems.

Dansie is leading efforts with in-country partners in Fiji, Indonesia, India and China to engage with social and natural science researchers to develop monitoring systems of macro- and microplastics in waterways and to survey surrounding communities. Analyses of waste management systems and critical points of ineffectual waste management will also be made to determine potential solutions to reduce plastic levels.

The Impact: Understand causes and potential solutions, reduce plastic levels

Capturing and removing plastics through effective environmental management and engineering solutions is essential if we are to remedy the negative impacts of plastic on the environment, the food chain and our wellbeing. GWI's work, overseen by Dansie, is helping to understand how plastic is entering waterways and

what societal and engineering changes can be made to minimise this flow of plastic and remove it from some of the world's most polluted rivers. This will help to reduce the amount of plastic entering the global ocean annually, mitigating the contamination of our natural resources and natural food stocks.

Researcher

Dr Andrew Dansie is Program Manager with the UNSW Global Water Institute. He has 12 years of experience in the water sector, spanning the private sector, multilateral organisations and tertiary institutions. His time as a Research Fellow with the United Nations University Institute for Water, Environment and Health saw him work with projects and partners across six continents. As Project Director of a four-year global assessment of transboundary water projects, he coordinated over 100 scientists and stakeholders to better understand the scientific needs for managing the world's rivers, lakes, aquifers, coastal and ocean environments. Dansie is passionate about using science-based problem solving and partnership for the benefit of both the environmental and human wellbeing.

Ben Falkenmire 20.08.18