



MALELILI NAULIVOU ROKOMATU

Pacific Node, PhD student

The impact of microplastics on human health

Malelili Naulivou Rokomatu, a PhD candidate within the University of Newcastle's Pacific Node, is investigating the effects of microplastics on human health in Fiji. As part of the Environmental Plastic and Innovation Cluster (EPIC) led by Dr Thavamani Palanisami, he is one of seven PhD students working towards finding solutions to the pressing global issue of plastic pollution. His project is co-supervised by Dr Palanisami, Associate Professor Geoffrey MacFarlane, Dr Suresh Subashchandrabose and Dr Geetika Bhagwat.

Plastic pollution poses a serious threat to the marine environment. Island nations, including Fiji, are at the forefront of this crisis, given they receive an end of a waste stream that far outweighs their waste management infrastructure and consume a high amount of seafood, including

freshwater food. Malelili's research activity involves field sampling and laboratory experiments to determine the status of microplastic pollution at the offshore and connecting surface waters in selected locations in Fiji, as well as marine ecosystem surveys and engagement with stakeholders and local communities.

The objectives of this project are to:

- Determine the occurrence and distribution of microplastics on coastlines
- Investigate the direct and indirect impacts of chemicals associated with microplastics on human health



ENGAGEMENT

Malelili had the opportunity to work alongside 17 scientists to develop the "Scientists' Declaration on the Need for Governance of Plastics Throughout their Lifecycles". The document made an important contribution to the adoption of the resolution, 'End plastic pollution: towards an international legally binding instrument' at the United Nations Environmental Assembly's fifth session.

"Microplastics are a pervasive emerging contaminant, which humans are exposed to via various pathways including through their food sources. Given seafood is a main dietary choice for Pacific people, outcomes from Malelili's project are crucial to understanding food chain transport and health implications of microplastics for Pacific nations."

- Dr Thavamani Palanisami
Director of the Environmental Plastic and Innovation Cluster

"This PhD journey has been both an exciting and challenging experience, and has provided me the opportunity to contribute to my country in the fight against plastic pollution."

- Malelili Naulivou Rokomatu

PACIFIC NODE

The Pacific Node is a strategic initiative of the Newcastle Institute for Energy and Resources (NIER) at the University of Newcastle, in partnership with the Secretariat of the Pacific Regional Environment Programme (SPREP).

The Pacific Node provides a flexible framework to harness joint capacity and develop collaborative engagement between academia, industry, government and communities to contribute to and deliver demonstratable impact for the environment, economies, societies, and culture of the region across four priority areas:

- Climate Change Resilience
- Ecosystem and Biodiversity Protection
- Waste Management and Pollution Control
- Environmental Governance

Through the Pacific Node the University of Newcastle works with Pacific partners to deliver a targeted PhD program, research collaboration, and capacity development training throughout the Pacific region.

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