Mapping UNSW Impact

Global Development

Primary SDG	**4: QUALITY EDUCATION**
Broad theme	Co-creating a university degree
Research	Designing and executing a degree program in civil engineering, to build local capacity in infrastructure development
Impact region	The Pacific
Faculty	Engineering
School/Institute	Civil and Environmental Engineering
Academic	Professor David Carmichael
Project partners	The University of the South Pacific, local engineering consultancies and contractors
Related SDGs	9: Industry, Innovation and Infrastructure

Elevator pitch

To help the Pacific spend less on foreign education and consultancies to improve local infrastructure, David has co-created an internationally recognised civil engineering degree at the region's top university that will improve the quality of local capacity and infrastructure over time.

The Challenge: A need to build local capacity in infrastructure

Commonly, civil engineers consulting and contracting to the Pacific region fly in and fly out, taking expertise and knowledge with them after a project is completed. There is a need to build local civil engineering capacity with a focus on university education that deals with the design, planning, construction and management of infrastructure projects such as buildings, water supply, sewerage, roads, sea and air ports, bridges, and dams.

High quality degrees are available outside the Pacific, but they are expensive and not culturally relevant. The University of the South Pacific (USP) is the premier provider of tertiary education in the Pacific region, with its main campus in Suva (Fiji) and twelve branches across the Pacific. Currently, USP offers engineering degrees in mechanical engineering and electrical engineering but there is no degree in civil engineering.

UNSW's solution: Create a top class civil engineering degree for local people

On realising the region's need for civil engineers and the lack of a local educational platform for creating them, David approached USP in 2017 and offered to assist with the creation of a bachelor degree in civil engineering. David visited USP to determine how best to design the degree. The new degree calls on existing resources and subjects from the mechanical and electrical engineering degrees and other degrees at USP, helping to create a civil engineering degree at little extra cost to USP. The program, which will be internationally recognised and accredited, will take its first students in 2019. Approximately 50 students per year are expected. The program will be run and executed by local lecturers, with David performing an ongoing advisory role.

The Impact: Build and attract local talent, improve local infrastructure

A degree in civil engineering at USP will lay the foundations for the building of local capacity in infrastructure development over time. A local, cost effective degree is likely to attract many candidates from across the Pacific region. These students will help build local expertise and capacity, reducing the region's reliance on overseas contractors and consultants. Once this local capacity is grounded, the region will benefit in the form of better housing, roads, sewerage systems, water systems, ports and other infrastructure.

Researcher

David Carmichael is Professor of Civil Engineering and former Head of the Department of Engineering Construction and Management at UNSW. He is a graduate of the Universities of Sydney and Canterbury; a Fellow of the Institution of Engineers, Australia; a Member of the American Society of Civil Engineers; and a former graded arbitrator and mediator. David is passionate about helping people, who are not as fortunate as others, improve their quality of life through better infrastructure.

Ben Falkenmire 10.07.18