

# Mapping UNSW Impact Global Development

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| <b>Primary SDG</b>      | <b>9: INDUSTRY, INNOVATION AND INFRASTRUCTURE</b>                                      |
| <b>Broad theme</b>      | Sustainable mining practices   |
| <b>Research</b>         | Teaching students about sustainable mining practices                                   |
| <b>Impact region</b>    | Thailand, South East Asia  |
| <b>Faculty</b>          | Engineering  |
| <b>School/Institute</b> | Australian Centre for Sustainable Mining Practices                                     |
| <b>Academic</b>         | Associate Professor David Laurence   |
| <b>Project partners</b> | Chulalongkorn University, DFAT, Thailand Institute, Austrade, AusAID, World Bank, UNDP |
| <b>Related SDGs</b>     | 12: Responsible Consumption and Production   |

## Elevator pitch

David is teaching students from across South East Asia about leading sustainable mining practices, lifting the standard of mining practice knowledge and understanding across the region, and resulting in more positive outcomes for communities, the environment, miner safety, and economies.

## The Challenge: Mining is often undertaken by companies with poor practices

Developing countries are often sitting on valuable resources, attracting the interest of foreign mining companies. The success of a mine depends on the quality of the mining operator and its practices. Poor practices can have disastrous consequences. Cyanide, universally used in mines to extract gold, can often end up in waterways. The failure of storage dams can cause massive environmental damage and even deaths. A lack of planning around rehabilitation after the end of the mine and acid drainage are further examples of poor practices. A mining company needs to plan for safety, environmental, community, and economic issues before a mine goes ahead.

Australia has embraced sustainable mining practices more than any other country and is recognised for its expertise in mine closure and rehabilitation. It knows how to revegetate disturbed areas with native species and attract wildlife back in a range of climatic conditions. Australian mining companies looking to build a mine overseas often work with DFAT to promote their credentials. They are usually interested in employing locals for cost, language and customs reasons.

## UNSW's solution: Teach students about sustainable mining practices

David is a sustainable mining practices expert with plenty of experience helping developing countries to develop a mine sustainably. While in the private sector, he was a member of the first aid mission to Vietnam, updating resource legislation and government infrastructure to attract Australian investment. Working for AusAid in Zimbabwe in the mid 90s, David worked with the Ministry of Mines to update computer equipment, provide training packages and guide staff in the field. He then worked with Fiji's Department of Resources to

train staff in safety and the environmental side of mining, remove cyanide from their mining process, improve storage of waste, and provide and implement better mining regulations.

Since 2005, David has worked extensively in South East Asia, fast tracking the capacity of local academic staff in mining research and teaching. He travels to Thailand each year to teach a sustainable mining practices course at Chulalongkorn University in their mining school. This school is a hub for the Asian region and attracts postgraduate students from Laos, Cambodia, Vietnam and Myanmar. The train the trainer course (one week to six weeks) encourages students to go home and pass on knowledge and training to local officials and mining staff, boosting the quality of mining practices in their country. As part of the course, David also facilitates internships in Australian mining companies.

Representing DFAT and Australian mining companies, David has held workshops with communities on sustainable mining practices in South East Asia, Africa and Latin America. These workshops discuss sustainable safety, environment, community and economic practices. David is also the editor of booklets on Leading Practice Sustainable Development in the Mining Industry.

**The Impact: Ensure mines are safe, benefit the community, and don't harm the environment**

Mining has the potential to raise the prosperity of a community and a country. With sustainable practices in place, economic benefits from the mine can be long lasting, the mine can be safe for workers and the environment, and the community shares in the benefits. Financially empowered, communities can use mining money to invest in local businesses including environmental initiatives. Sustainable mining companies also often invest in local infrastructure, education and clinics, improving a community's quality of life.

**Researcher**

David Laurence is an Associate Professor in the School of Mining Engineering and is the Director of The Australian Centre for Sustainable Mining Practices. David's research expertise includes mine closure, mine safety and minerals education. In recent years he has worked extensively in South East Asia, Africa, South America and the Pacific. He is the co-founder of the Asia-Pacific Mining Education Network which is designed to build capacity in minerals education and research while also working with industry and government for community benefit. David remains a key Australian government and industry advisor. He is semi-retired but maintains a strong interest in development work.

Ben Falkenmire 19.07.18