

CSMI boosts research plans for 2014

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South Africa needs to keep an eye on whether policy, laws, and practice are supporting its aim of sustainable development in mining and industry – and this is going to need more applied research across disciplines.

Such research is already underway at the Centre for Sustainability in Mining and Industry (CSMI), part of the School of Mining Engineering at Wits University, and is being expanded as part of its new research focus in 2014.

The CSMI is recognized globally as a centre of excellence in Africa for the training and education of managers, practitioners, and regulators in sustainable development. 'Having established itself over the past decade as an education and training centre of excellence in safety, health, environment, and community engagement (SHEC), the CSMI is now focused on accelerating its research mandate,' said programme manager Nancy Coulson.

'The research not only meets the national need for reflecting on policies and strategies, but also provides longevity to our training programmes at the CSMI, ensuring that what we teach remains rooted in current industry and social issues,' said Coulson.

The CSMI offers a range of SHEC-related courses at Master of Science (MSc) and certificate level, as well as short courses, for practitioners throughout Africa.

Matching its research areas with its educational focus, the centre explores three main fields: environment and sustainable development; occupational health and safety; and society and engagement.

'Each of these "clusters" supports a range of research activities,' said Coulson. 'Also, we are committed to understanding the linkages between each cluster, and to collaboration with other centres which are outside of our particular disciplines.'

Governance and regulation is an important theme across clusters, so legislation and policy frequently come under scrutiny.

'We are interrogating the Mine Health and Safety Act, for instance,' said Coulson. 'As an example of outcomes-based health and safety legislation – which originally came out of the United Kingdom in the 1970s – this law has been implemented in SA now for the best part of 20 years. However, we need to examine how this type of legislation translates in the South African context.'

An important aspect of the Act was to entrench risk management and worker participation in the daily practice of mining operations. The CSMI has two PhD students registered in this area of work, to examine if the law's outcomes are in fact unfolding in the way that was envisaged by legislators.

'Most of the research in this field is currently coming from the UK, Canada, and Australia, while very little is being done locally, which presents a huge opportunity to the Centre,' she said. 'The CSMI is initiating applied research that could inform the ongoing assessment of our laws and policy. What we've observed is that amendments to the Act get recommended, but there is insufficient underpinning research to validate proposals.'

Coulson stressed that the applied nature of the research is vital to the CSMI mandate, as it needs to feed into the policy process and help frame solutions to challenges facing industry and society.

'We are clear that our research should be interdisciplinary, as the solutions to many of the issues facing sustainability cannot be found in one discipline alone. We need to continue working across disciplines, and the CSMI prides itself on highlighting the linkages between traditionally separate fields of investigation.'

Management of the environment, another key focus area for the Centre, is also being researched in terms of regulatory effectiveness. The impact of mining on the environment has always been regulated operation-by-operation, as each site must ensure that its activities comply with its particular license requirements.

'This does not necessarily translate into the best management of the environment, because the natural environment is more commonly a regional issue,' Coulson explained. 'You find "mining intensity" in many regions, such as Mpumalanga or Rustenburg, yet our regulations are not allowing us to manage this regional environment effectively.'

'One approach to understanding how the regional impacts of mining might be better managed over time is by examining changes to the landscape. We have a PhD registered in this area, which is focused on the impact of mining on the landscape of the Welkom area – using geographical information systems (GIS) to track the changes since before gold was mined there.'

The multidisciplinary focus is important here too. In the Welkom study, for example, the research will look not just at environmental changes to the landscape, but also at human settlement patterns, and what communities in that area report and remember about the changes over time.

To do this, the CSMI collaborates with research groups such as the Society, Work and Development Institute – also at Wits University – to tap into the methodologies they use in working with communities and their body of knowledge on how communities in South Africa are shaped.

'We do this because, while there are natural limits to what you can extract from nature, that's not the only important aspect of sustainability,' said Coulson. 'We also need to talk about a sustainable society, sustainable communities, and sustainable business models.'

Stakeholder engagement is another key research focus.

'One form of engagement we'll be looking at is in the area of artisanal and small-scale mining (ASM), which is gathering more attention now in southern Africa,' she said. 'The sector is a source of livelihood in many communities, but is also precarious and sometimes characterized by conflict. This may occur where a licence is awarded to a company by national government on a site where artisanal miners are already operating. Artisanal miners are often considered as a significant social risk for large-scale mining companies.'

The ASM research will not be limited to South Africa but will extend to other Southern African Development Community (SADC) countries. CSMI's researchers have already done substantial work on ASM in the Democratic Republic of Congo, in the context of understanding stakeholder engagement and corporate social responsibility.

'We are excited about the ASM research focus as it creates the opportunity to network and learn across the SADC region,' said Coulson. 'There have been initiatives in SADC to harmonize the approach to mining within the region – including a better understanding of the challenges of ASM – and we hope to feed our research into this process.'



Nancy Coulson, programme manager, CSMI

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