

Research professionals development programme

This programme entails a collection of structured learning and development platforms aimed at advancement of the research career path with the purpose of correcting the CSIR's human capital profile in science, engineering and technology. It supplements other human capital development (HCD) programmes by focusing on advancing the growth of staff to higher echelons of the career ladder in particular job families, consistent with the personal development goals of the research professional.



Masupha Letsie is working towards his second Master's degree

C-PORT

The CSIR's coastal engineering and port infrastructure research group, based in Stellenbosch



C-PoRT initiative set to boost competitiveness of SA ports

Coastal and port engineering players jointly develop skilled professionals

The Centre for Port Research and Training (C-PoRT) aligns with the CSIR's strategy to provide a platform for the advancement of individuals on the research and technical support career paths to cutting-edge facilities and technologies.

THE SUCCESS OF COLLABORATIVE skills development programmes launched in the past five years by port authorities and tertiary education institutions in Singapore and Rotterdam, respectively, has led to the establishment of a similar initiative in South Africa. The Centre for Port Research and Training (C-PoRT), a partnership between the National Ports Authority (NPA), the CSIR and Stellenbosch University, promises to create a pipeline of skilled professionals that will enhance the ability of South African ports to compete with the best in the world.

According to Hans Moes, senior researcher in the CSIR's coastal engineering and port infrastructure research group, the organisation's interest was piqued when the Maritime and Port Authority of Singapore, the National University of Singapore, the Nanyang Technological University and the Singapore Maritime Academy announced at an international conference in 2001 that the four institutions would pool resources to ensure the continued competitiveness of the Port of Singapore, one of the largest container ports in the world. A year later, CSIR

researchers attended a conference in Rotterdam where the Port of Rotterdam announced that it had formed a similar association with Erasmus University and the University of Technology Delft (TU Delft).

"Failure to keep abreast of the latest developments in technology, business, shipping and trade can seriously disadvantage a port," says Hans. "The Rotterdam announcement brought home quite forcefully the realisation that the ports industry in South Africa and on the broader African continent needed to invest in similar partnerships if it wanted to remain competitive."

Hans points out that, while South Africa does not have one big port, such as Singapore or Rotterdam, the combined



Craig Johnson, who is studying towards an MEng in coastal engineering

operations of all the ports managed by the NPA amount to world-class volumes of trade and intensities of shipping. "The NPA has over the past decade consistently demonstrated a commitment towards maintaining the world-class status of South African ports, and we felt confident that the time was right to propose a partnership between industry, research organisations and training institutes to work towards this goal." The NPA's support for the proposal resulted in agreement by Stellenbosch University to establish an NPA chair in coastal and port engineering, thus securing the academic training component of the partnership.

Financial support has been solicited from the Department of Science and Technology to upgrade the CSIR's coastal and port engineering research facilities, to support international cooperation and for the recruitment and training of research staff.

The main purpose of the C-PoRT initiative is to ensure a consistent supply of coastal and port engineers, backed up by access to cutting-edge facilities and technologies. By pooling resources and integrating efforts, the programme has already produced a number of postgraduate students, hopefully to be followed by PhDs in the not-too-distant future.

The postgraduate students include the CSIR's Craig Johnson, Kishan Tulsi and Masupha Letsie, who are studying for MEng degrees in coastal engineering. In an impressive achievement, this will be Masupha's second Master's degree, having completed his first in the field of dam and river hydraulics.

As Hans explains, the CSIR benefits significantly from the work done by Master's and PhD students. "The close collaboration between the CSIR and Stellenbosch University, as the research and training components of C-PoRT, creates multiple opportunities for skills development and knowledge generation."

In addition to local industry, research and training institutes, international partnerships and exchange programmes are crucial pillars of the C-PoRT initiative. The relationship with TU Delft is particularly strong, with three researchers, Alex van Deyzen, Auke Algera and Dr Wim van der Molen, currently working with the CSIR team. As a PhD student at TU Delft, Wim was involved in the training of students and he is playing a similar role at the CSIR, in addition to his research work on moored ship problems.

Apart from successfully completing projects in African countries such as Namibia, Mozambique, Nigeria, Ghana and the



Senior CSIR researcher Hans Moes, one of the leading players in the C-PoRT initiative

Democratic Republic of Congo, the CSIR's coastal engineering and port infrastructure team has worked as far afield as Mexico, Georgia, Australia and Tristan da Cunha.

Technologies recently developed and refined by the CSIR include a breakwater monitoring system and Harbour Watch, a low-cost video system to support safe port operations. The latter automatically provides additional visual information and early warning to harbour masters, vessel traffic controllers and port operators. In the absence of prominent port control buildings, cameras can be placed strategically to cover the entire port, make all views easily accessible and recordable, and raise the alarm on potentially dangerous or unsafe conditions.

"We are confident that the C-PoRT initiative will contribute significantly towards South Africa's ability to play a leading role in coastal engineering and port infrastructure, not only in Africa but also in the rest of the world," Hans concludes.

- Deidre Lotter