A global green journey

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ANICIA PETERS was previously Pro Vice-Chancellor for Research, Innovation and Development at the University of Namibia and was also the Chairperson of the Namibia Presidential Task Force on the Fourth Industrial Revolution. Her specialisation is human computer interaction. She holds two undergraduate degrees cum laude from the Namibia University of Science and a Doctor of Philosophy for the Iowa State University and a Post Doctorate from Oregon State University. She is passionate to see tech, research and innovation take off fully across Africa.

Namibia's President introduced the Harambee Prosperity Plan II in early 2021, with a focus on exploring the production of green hydrogen and ammonia. The plan was ambitious and required significant research and development, skills enhancement, infrastructure development, and partnerships. James Mnype, Namibia's Green Hydrogen Commissioner then called upon the two public universities and the education sector to actively participate in the national green hydrogen initiative.

Namibia's tertiary education system comprises only two public universities, several Vocational Training Centres (VTCs), one private university, and private training institutions. Despite considerable investments in education, Namibia's R&D sector is considered weak.

While the two public universities possess some capacity and specialised researchers in certain aspects of the green hydrogen value chain, there is a significant need for specialised skills, research and development funding, as well as access to laboratories and equipment.

In response to these needs, the University of Namibia established the Namibia Green Hydrogen Research Institute.

Initially, the institute operates virtually and involves over 70 existing academic staff distributed across six research areas. These research centres are grouped into thematic clusters, focusing on clean hydrogen production (desalination, solar, wind, electrolysis, etc.), storage and new materials, fuel cell technologies and mobility, local utilisation, regulations, economics, communities, and the environment, capacity building and standards, as well as digital and emerging technologies.

To bridge the skills and equipment gap, the institute has established partnerships with national and international universities, research institutions, and private sector organisations. These collaborations have led to joint research projects, limited upskilling of university staff, and scholarships for postgraduate studies. Additionally, the German Ministry of Education and Research (BMBF) funded four green hydrogen pilot projects, including R&D components, and provided initial scholarships for 93 master's and vocational students.

Another crucial factor for the advancement of green hydrogen is the Information and Communication Technology (ICT) ecosystem in Namibia. In July 2021, I was appointed as Chairperson of an 8-member Task Force on the Fourth Industrial Revolution (4IR). A country readiness assessment to leverage 4IR technologies, focusing on the theme of "4IR as an enabler for a green and inclusive industrialisation," encompassing contextualised predeterminants, the World Economic Forum's Future of Production instrument, and broad 4IR application areas in Namibia. Thirteen recommendations were approved by Cabinet.

In mid-2021, an initial technical committee was formed within the Namibia Green Hydrogen Council, but it was dissolved in November 2021 after fulfilling its assigned tasks. The committee played a vital role in initiating the call for proposals for the development of green hydrogen, and Hyphen Hydrogen Energy was selected as the preferred bidder. As the Chairperson of the Presidential 4IR Task Force, I served on the Green Hydrogen Technical Committee to ensure that the national R&D components and technology requirements were incorporated. However, to achieve the rapid developments in Namibia's green hydrogen plans, R&D needs to be elevated to a national coordination level that will encompass the entire education and R&D sector.

The National Commission of Research, Science, and Technology (NCRST) is Namibia's national agency for research, science, technology, and innovation, created through the Research Science and Technology Act of 2004. Besides its role as a national regulator and funder for research, it is responsible for the promotion, coordination, and development of research, science, and technology across all institutions. The NCRST is also responsible for setting the national research agenda, defining priority research programs, and developing national R&D infrastructure. Green Hydrogen will be one of the national research priorities for the next five years. However, the NCRST is heavily underfunded and relies on external funding and partnerships for national programs and infrastructure.

Namibia's green hydrogen journey is an integrated, multi-faceted global journey as the world strives to decarbonise. Investing in Namibia's capacity in R&D, science, technology, skills development, entrepreneurship and enterprise development, national research institutions, and a conducive policy and regulatory framework with adequate tax incentives and reduced trade barriers is critical. Join us on our journey. F