



THENSA

Technological Higher Education Network South Africa

ANNUAL REPORT

2022

Institutions

Members:



CPUT - Cape Peninsula University of Technology



CUT - Central University of Technology, Free State



DUT - Durban University of Technology



MUT - Mangosuthu University of Technology



TUT - Tshwane University of Technology



VUT - Vaal University of Technology



UMP - University of Mpumalanga



WSU - Walter Sisulu University



UNIVEN - University of Venda

Associate Members:



NUST - Namibia University of Science and Technology



ATUPA - Association of Technical Universities and Polytechnics in Africa



Acronyms

ATUPA:	Association of Technical Universities and Polytechnique's in Africa
CBL:	Competency Based Learning
CPUT :	Cape Peninsula University of Technology
CUT :	Central University of Technology
DEA :	Department of Environmental Affairs
DHET :	Department of Higher Education and Training
DUT :	Durban University of Technology
EU:	European Union
E-WASA :	E-Waste Association of South Africa
EWSETA :	Energy and Water Sector Education & Training Authority
NRF:	National Research Foundation
GMIT:	Galway-Mayo Institute of Technology
GEA:	Graduate Employability APP
HEMIS	Higher Education Management Information System
HERE:	Higher Education Reform Experts
HERESA:	Higher Education Reform Experts South Africa
MUT :	Mangosuthu University of Technology
NQF :	National Qualifications Framework
NDP:	National Development Plan
NIPMO:	National Intellectual Property Management Office
NUST:	Namibia University of Science and Technology
PI :	Performance Indicator
QCTO :	Quality Council for Trades and Occupation
RIEC :	Research, Innovation and Enterprise Committee
RISG:	Research and Innovation Strategy Group
SARCHI	South African Research Chairs Initiative
SASCE :	South African Society for Cooperative Education
SATN :	South African Technology Network
SAQA :	South African Qualifications Authority
SETA :	Sector Education and Training Authority
THEA:	Technological Higher Education Association Ireland
THENSA :	Technological Higher Education Network South Africa
TIA :	Technology Innovation Agency
TEG:	Tourism Education Gateway
TTO:	Technology Transfer Office
TUT :	Tshwane University of Technology
UIF:	Unemployment Insurance Fund
UMP :	University of Mpumalanga
UoTs:	Universities of Technology
UNIVEN:	University of Venda
USAf:	Universities South Africa
VUT :	Vaal University of Technology
WACE :	World Association for Cooperative Education
WIL :	Work Integrated Learning
WSG:	World of Work Strategy Group
WSU :	Walter Sisulu University



The **Technological Higher Education Network South Africa (THENSA)** is recognised as a **vibrant, innovative consortium** for advancing **technology-focussed** institutions with a transformative societal impact.

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CHAIRPERSON'S MESSAGE



Prof NS Nhlapo

Chairperson | Technological Higher Education Network South Africa (THENSA)

Vice-Chancellor | Cape Peninsula University of Technology (CPUT)

The Sustainable Development Goal 4 (SDG 4) requires that countries ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Globally, the gross enrolment ratio stands at 38% (World Bank, 2020).

The Sustainable Development Goal 4 (SDG 4) also requires that countries create relevant skills for decent work, and by 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs, and entrepreneurship.

In recent years, higher education universities across the world have been confronted with the biggest challenges ever faced both nationally and globally. These challenges have changed significantly over the years and continue to change at a very fast pace. In South Africa, it is without a doubt, that the pandemic has exacerbated the existing socio-economic inequalities that perpetuate the challenges facing universities. The wider challenges facing our universities is poor economic growth, lack of adequate funding, high youth unemployment, job scarcity, electricity instability, leadership crisis, etc. This has a huge impact on the entire university stakeholder community of people.

Universities had to adapt swiftly to keep up with this ever-changing landscape of hybrid/blended format of educational delivery. To function optimally, universities had to prioritise in new and existing reliable technologies for teaching and learning. Universities had to put in place appropriate interventions to ensure that their staff and students are supported with the digital transition of lifetime teaching and learning.

At the same time there was a growing demand for higher education and universities to plan for this demand despite enormous challenges such as funding and related systemic issues. Access and success in higher education required investment in the student experience, teaching pedagogies, and lifelong learning.

There is an increasing demand from students and employers that graduates have more hands-on work experience. Our universities are constantly aspiring for more work-integrated-learning opportunities for our students in placements and internships, despite the increased challenges of the high unemployment status of the youth and graduates in our country.

THENSA, through its partnerships and collaborations both nationally and internationally, continue to work together to address the broader issues of new and existing curriculum challenges, health, climate, environment, and social issues that required universities to provide solutions through joint research, innovation and partnerships. Some of these activities are detailed in the Annual Report.

I wish to thank our CEO, Dr Anshu Padayachee, Christelle Venter and the dedicated support team for their continued positivity during these challenging times in higher education, wherein Dr Padayachee through her leadership and tenacity for success, ensured that the vision, mission and strategic goals of THENSA is achieved.

MESSAGE FROM THE CEO



Dr Anshu Padayachee | Chief Executive Officer

I take pride in our collective achievements, as we reinforced the solid foundation of our diversified and resilient sector. Despite the challenging macroeconomic context, we are well positioned to meet the challenges we will face in 2023.

Our dedicated Team, albeit lean remained disciplined, and focused on the milestones that we had to achieve.

I would like at this juncture, to thank the small THENSA Project Team, who supported us throughout this eventful year. I am grateful to our clients for entrusting us with their work, to our Board of Directors for providing invaluable guidance and subscribing to our vision. I also wish to express my appreciation to our talent, who delivered successful outcomes across the globe, especially in respect of our International Partnership programmes. THENSA had a remarkable year of successes, including increased recognition of our education and research – all while continuing to navigate the COVID-19 pandemic.

Rich and immersive educational experiences were developed for all our students and staff to enhance their understanding of the local and global challenges which resulted in a stronger sense of belonging, particularly after the lack of on-campus connection in previous years.

I look forward to the year ahead and am excited about what we can achieve together. I am pleased to highlight some of the work achieved in 2022 across the THENSA Sector – the details of which can be found in the ensuing pages – that meet the goals and ambitions outlined in our Strategic Plan and look forward to another year of growth, successes and challenges to be met in 2023.






1. INTRODUCTION - THENSA 2022


THENSA is pleased to present its Annual Report for the reporting period January 2022 to December 2022. This annual report represents the second iteration since the rebranding of THENSA 2021 and reflects on the achievements and relevant financial information in relation to the initiatives and efforts transforming, developing, and improving the sector.

Whilst this period of reporting period had to contend with some of the challenges post the COVID-19 pandemic, THENSA remained resolute in its commitment to technological investments to develop a strategy for teaching and learning continuity and to support universities in their hybrid teaching and learning delivery platforms especially during and Post Covid. The efforts of the entire THENSA Consortium over 2022, has in many ways, been a sober reflection of the full impact of the COVID-19 pandemic on our sector. Our teams have shown incredible resilience, professionalism, and optimism in the face of many challenges.



The various programmes coordinated by THENSA and the joint strengths of its member institutions, contributed significantly to the research, knowledge, technology, and leadership requirements that South Africa needed during this unprecedented crisis. As you will see in this report, THENSA is committed to fostering the next generation of skilled human resources, research, and innovation that our nation needs to grow and prosper while producing the research breakthroughs that will drive us forward. Membership has since increased with the rebranding of THENSA.

Members:

-  Cape Peninsula University of Technology (CPUT)
-  Central University of Technology, Free State (CUT)
-  Durban University of Technology (DUT)
-  Mangosuthu University of Technology (MUT)
-  Tshwane University of Technology (TUT)

-  Vaal University of Technology (VUT)
-  University of Mpumalanga (UMP)
-  Walter Sisulu University (WSU)
-  University of Venda (UNIVEN)

Associate Members:

-  Namibia University of Science and Technology (NUST)
-  Association of Technical Universities and Polytechnique's in Africa (ATUPA)

THENSA STRATEGIC PARTNERS

- 🌀 Australian Technology Network (ATN)
- 🌀 Clarivate Analytics
- 🌀 Democracy Works Foundation
- 🌀 Department of Higher Education and Training (DHET)
- 🌀 Department of Labour (UIF)
- 🌀 Department of Science and Innovation (DSI)
- 🌀 E-waste Association of South Africa (EWASA)
- 🌀 Host of Business and Industry Partners
- 🌀 Institute of Natural Resources (INR)
- 🌀 National Department of Tourism
- 🌀 National Intellectual Property Management Office (NIMPO)
- 🌀 National Research Foundation (NRF)
- 🌀 Open Window Institute
- 🌀 Quality Council for Trades and Occupations (QCTO)
- 🌀 Sector Education and Training Authorities (SETA)
- 🌀 South African Public Colleges Association (SAPCO)
- 🌀 South African Qualifications Authority (SAQA)
- 🌀 Southern African Regional Universities Association (SARUA)
- 🌀 Southern African Research and Innovation Management Association (SARIMA)
- 🌀 Technological Higher Education of Ireland (THEA)
- 🌀 Technology Innovation Agency (TIA)
- 🌀 World Association of Cooperative Education (WACE)

1.1 VISION, MISSION, AND STRATEGIC GOALS FOR 2022

Vision Goals For 2022

THENSA is recognised as a vibrant, innovative consortium for advancing technology-focused institutions with a transformative societal impact.

Mission

THENSA's mission is to facilitate:

- ▶ Leadership, advocacy and best practice amongst its members and stakeholders.
- ▶ Quality education to support globally competitive, future-ready graduates and entrepreneurs.
- ▶ Impactful research and innovation toward sustainable societies; and
- ▶ The expansion of a national and global innovation ecosystem.

Strategic Goals

- 🌀 To provide transformative leadership and promote best practice.
- 🌀 To act as an advocacy and lobbying agency for the consortium.
- 🌀 To be a positive catalyst for sustainable socio-economic development.
- 🌀 To promote and enable impactful real-world research and innovation.
- 🌀 To mobilise mutually beneficial national and international education, government, business, and industry ecosystems and networks.
- 🌀 To promote quality, technology-based education, and training for the world of work.
- 🌀 To increase membership and funding sources to ensure sustainability of THENSA.

2. GOVERNANCE

The Board of Directors of THENSA comprises of nine Vice Chancellors of Technology Focussed Universities. As custodians of the Network, the Board has in place mechanisms to ensure sufficient oversight of the organisation's controls and functioning. The Annual Report of THENSA demonstrates the Network's contribution in guiding and supporting its member institutions.

Company Compliance

As a responsible corporate company, committed to high standards of governance, ethics, and integrity, THENSA adopted the principles of King IV. Over the past year, THENSA revised their business processes and standards to be more aligned with the principles of King IV. The Board has established specific mandates to supporting committees to fulfil its duties while retaining effective control and accountability.

The Board is the highest decision-making body. It approves the strategy and monitors its implementation. There is a clear distinction between the role and responsibilities of the Chairperson and the CEO, set out in the Board Charter. At Board level there is a clear balance of power and authority to ensure that there is not one Director that has the sole power in decision making.

In line with the Memorandum of Incorporation, the Board is required to hold at least 3 meetings per year. In 2022, the Board convened 3 times and there was a 72% attendance at all three Board meetings. Whilst all Directors are nominated by its members, the performance of the Board is assessed on an annual basis to continuously improve its effectiveness. The assistance of an independent consultant is used to assist the Board in ensuring that all the necessary regulatory requirements are adhered to.



Prof NS Nhlapo

Chairperson: Technological
Higher Education Network
South Africa (THENSA)

Vice-Chancellor: Cape
Peninsula University of
Technology (CPUT)



Prof R Songca

Deputy Chairperson:
Technological Higher Education
Network South Africa (THENSA)

Vice-Chancellor :Walter Sisulu
University (WSU)



Prof TZ Mthembu

Vice-Chancellor:
Durban University of
Technology (DUT)



Prof Dan Kgwadi

Vice-Chancellor
Vaal University of
Technology (VUT)



Prof M Ramogale

Acting Vice-Chancellor
Mangosuthu University of
Technology (MUT)



Prof A Ngowi

Acting Vice-Chancellor
Central University of
Technology.



Prof TV Mayekiso

Vice-Chancellor
University of Mpumalanga
(UMP)



Dr B N Nthambeleni

Vice-Chancellor
University of Venda
(UNIVEN)



Prof TS Maluleke

Vice-Chancellor and Principal:
Tshwane University of
Technology (TUT)



Dr E Naomab

Vice-Chancellor
Namibia University Science
and Technology (NUST)



Mrs. Jahou Samba Faal

Secretary General
Association of Technical
Universities and Polytechnics in
Africa (ATUPA)

Associate Member:

3. STRATEGIC TASK TEAMS

THENSA established several strategic task teams as an important element of THENSA's vision, mission, and organizational structure. These task teams provided capacity to integrate and execute strategy in areas requiring intervention. They proved to be a source for the development of the staff and students at the various member institutions. Task Teams have guided and directed the activities of THENSA.

3.1 PERFORMANCE INDICATOR TASK TEAM (PI)

The PI Task Team has been investigating and providing information since 2010 on gaps, challenges, success, and failures across all its member institutions. This was in addition to comparing its performance in socio-economically relevant areas against all institutions in South Africa and its international partners. The (PI) Task Team continued its work to track progress of individual institutions including the network as a whole. The PI Task Team focussed in identifying areas of special focus for the THENSA Network and the programmes that are offered annually are based on activities requiring attention through data distilled from the PI statistics.

The PI reports are based on audited institutional data submitted to DHET's Higher Education Management Information System (HEMIS) and identifies these activities for consideration by THENSA. THENSA is currently developing an automated system which will be implemented in 2023 for the capturing of DATA which member Institutions will utilise in planning their activities against set targets.

3.2 WORK INTEGRATED LEARNING SOUTH AFRICA (WILSA)

The importance of Cooperative and Work Integrated Education (CWIE) is critical for employability and its significance is underpinned by the creation of a Directorate for WIL by the Department of Higher Education and Training (DHET) in South Africa. WIL also features prominently in the White Paper on Post School Education.

THENSA member Institutions, have for developmental and purely educational reasons placed increased emphasis on the need to integrate Work Integrated Learning (WIL) into their curricula and teaching and learning strategies. It is for this reason that THENSA has over the last five years invested considerable financial and human resources in implementing a few initiatives to capacitate its member institutions in WIL, both in terms of its study and practice.

These initiatives include the following:

Work Integrated Learning South Africa (WILSA) was launched in March 2022. Building on THENSA's involvement and crucial role in this space, WILSA was launched at the THENSA International Conference in March 2022. Dr Henri Jacobs (CUT) was appointed as acting Director of WILSA for the period of 1 October 2022 to 31 December 2023.

Below are the related WIL activities of THENSA, which contribute to and support the work of WILSA:

- 🌀 A HERESA (Higher Education Reform Experts-SA) WIL Expert group in partnership with six EU partners
- 🌀 The WIL Research (SARCHI Chair) based at CPUT
- 🌀 THENSA membership on the USAf World of Work Strategy Group
- 🌀 THENSA/THEA WIL Research Cluster
- 🌀 CHE WIL environmental scan
- 🌀 Online Entrepreneurship programme for WIL students

THENSA was approached by the CHE to determine the status of WIL in the higher education sector in South Africa. This project revealed that there was a huge demand for training in WIL. Needs were identified for training in the conceptualization and application of WIL. Resultantly, a WIL Coordinators Training Workshop (HERESA funded) took place in Durban on the 29-30 November 2022, followed by a WIL Policy Workshop on 1 December 2022 as a process to develop a National WIL Policy for South Africa. The SA WIL Research Cluster Team visited their Irish counterparts during June 2022 and published an article 'Enhancing work-integrated learning through South-North collaboration: A Comparative Analysis' in the International Journal for Work Integrated Learning.

An international visit to the Royal Institute of Technology in Stockholm, to benchmark WIL was undertaken in October 2022. The establishment of a professional body for WIL, as the first of its kind in Africa if not globally, is planned for 2023. Furthermore, national standards for WIL practice will be established by awarding practitioners with professional designations, hence validating their competence to practice against recognised WIL standards.



Work Integrated Learning (WIL) Coordinators Training Workshop Facilitators from the Central University of Technology (November 2022)



Group discussions at the HERESA/SAQA Work Integrated Learning (WIL) Policy Brief Workshop

The work of the other Universities Strategic Task Teams continues under the auspices of USAf.

4. THENSA PARTNERSHIPS AND SPECIAL PROJECTS

THENSA continues with its focus on the importance of capacity development programmes for its member institutions through strategic and collaborative partnerships with local and international collaborative partners. The need to cement partnerships with universities in our regions, in our country and internationally will enable us to have greater impact for all our stakeholders and communities.

The range of capacity building programmes offered by THENSA provide concrete mechanisms for expansion and capacitation of the sector and ensures greater potential for the expansion of the system of education, research, and innovation.

4.1 PARTNERSHIP WITH THE DEPARTMENT OF HIGHER EDUCATION AND TRAINING (DHET) CAPACITY DEVELOPMENT PHD PROGRAMMES FOR STAFF

The THENSA cohort model, which comprises of a series of in-person workshop sessions, structured modules and curriculum, a pool of expert facilitators and supervisors, supported by a dedicated programme team, resulted in a robust PHD programme that is relevant and effective in meeting the needs of the candidates. It also delivered on the objectives of the DHET funded programme.

The Candidates enrolled in this PHD programme progressed significantly as indicated below:

Name of University	Timeframe for Completion of PHD's	
	2022	2023
Cape Peninsula University of Technology	3	1
Central University of Technology	3	-
Durban University of Technology	5	2
Mangosuthu University of Technology	3	1
Tshwane University of Technology	7	3
University of Fort Hare	2	-
University of Venda	2	1
University of Zululand	4	1
University of the Western Cape	5	-
Vaal University of Technology	1	-
Walter Sisulu University	2	1
Total	37	10

The mobility grant provided by the DHET for candidates to meet their international mentors (post covid) was fulfilled by a few candidates who had graduated.

In summary, the programme achievements are highlighted below:

- 🌀 Cost effective programme based on a novel cohort model.
- 🌀 60 percent+ of the candidates embarking on this programme are black women in response to the transformation agenda of the DHET.
- 🌀 Candidates achieving the completion time frame within a 3- 4-year period.
- 🌀 Communities of practice created across disciplines and institutions.
- 🌀 Improved supervision experience and knowledge, writing skills and publications.

THENSA conducted 3 phases of these programmes for DHET and will be implementing a national project for the DSI commencing in 2023.



4.2 PARTNERSHIP WITH THE DEPARTMENT OF SCIENCE AND TECHNOLOGY (DSI) CAPACITY DEVELOPMENT PROGRAMMES

THENSA, in designing its project activities acknowledged that innovation is increasingly recognized as a catalyst for economic and social development in Africa and that Universities are key actors to promote innovation, creativity, and entrepreneurship through the curricula, and to promote innovation through research and development.

The objectives of the THENSA capacity development programmes, align themselves not only to the goals of the Ministry of Education, Science, and Innovation but also with the goals of the NDP and the Research and Development Strategy of the DHET and DSI, namely:

▶ To increase the percentage of academic staff (with special focus on Black Women) with masters and PhDs by 2030 and contribute to achieving the 75% set target by improving the quality and quantity of academic supervisors to support the increased production of post-graduate qualifications.

▶ To ensure the output of a critical mass of entrepreneurs through the implementation of the THENSA bespoke training programmes: Entrepreneurship training at NQF Level 4 (18 months); Entrepreneurship skills/workshops (5-day face to face workshop followed by 3 months online support) and 8 Week Online Entrepreneurship Programme in partnership with the Irish.

▶ To ensure high level capacity in Technology Transfer Offices (TTO) of universities through exposure and mentoring of TTO staff at international facilities. Review training programmes and accompanying research commercialisation Best Practice Manual (BPM) to capacitate and support TTO staff with a special focus on commercialisation.

The DSI funded programmes tackles some of the wider capacity development issues that dominate debates about the role of universities in development and how capacity building in research and innovation at universities should take place.

Details on the status of the DSI funded programmes are provided as follows:

4.2.1 THENSA-DSI CAPACITY DEVELOPMENT PROGRAMME FOR STAFF IN THE TECHNOLOGY TRANSFER OFFICES (TTO) AT PUBLIC UNIVERSITIES IN SOUTH AFRICA

The programme aims to build capacity within the higher education and training sector in South Africa, particularly within the area of research innovation and commercialisation, and will contribute to the enhancement and consolidation of the research and innovation clusters and communities of practice that THENSA has established through a range of strategic interventions and partnerships.

The MSC Programme will contribute to the technology transfer capacity development and training at the TTOs of the public universities in South Africa during the period 2022 to 2024, in the following key areas:

- 🌀 Technology transfer staff capacity development programme.
- 🌀 Developing a training programme for TTOs in South Africa; and
- 🌀 Facilitating the registration of staff at the TTOs with a professional practice board/council
- 🌀 Establishing a South African Society/Entity for TTOs.

A document entitled *“Brief Overview of the Landscape of Technology Transfer at selected international Universities”* provides an overview of the landscape of technology transfer at selected international universities, who are earmarked to partner with THENSA on the MSC Programme. A synopsis of the technology transfer and commercial activities at each of the ten identified institutions in Ireland, the Netherlands and Germany, is provided.

The following universities from Ireland have partnered with THENSA on this programme:

- 🌀 Trinity College (University of Dublin)
- 🌀 South East Technological University (SETU) (Waterford)
- 🌀 Technological University of the Shannon (TUS): Midlands Midwest (Limerick)
- 🌀 Atlantic Technological University (ATU) (Galway & Sligo)
- 🌀 Technological University Dublin

The Programme Coordinator for THENSA visited six institutions in Ireland from 4 to 16 November 2022. The Irish Universities committed to partner with THENSA on this programme, and to finalise the assigned international mentor at each university and the dates for the in-house mentoring, shadowing, and coaching placement. The aim is to place all 25 participants from South African universities in one-week placements at the international partner universities from April to June 2023. A visit was also made to the Knowledge Transfer Ireland (KTI) in Dublin and the Ambassador of South Africa to Ireland.



The Programme Coordinator, Prof Henk de Jager, and Programme Administrator, Dr Miemsie de Jager, with the Ambassador of South Africa to Ireland, Ms Yolisa Maya, and Counsellor Political, Mr Willem Geerlings.

The Programme Coordinator, Prof Henk de Jager, with Dr Paul Maguire: Head of Innovation & Technology Transfer, and Dr Brendan Jennings: Vice President: Research and Innovation, at the Greenway Hub building, Grangegorman Campus, Technological University Dublin (TU Dublin).



The Programme Coordinator, Prof Henk de Jager, and Programme Administrator, Dr Miemsie de Jager, with Mr George McCourt, Head of Innovation and Enterprise at Atlantic Technological University (ATU) Galway, and Ms Finola Howe, Head of Enterprise, and Engagement, ATU Sligo, at the ATU iHub Galway.

German University Consortium for International Cooperations (German abbreviation DHIK)

In addition, to the Irish partnerships, THENSA and its member universities have established several partnerships with universities in Germany. As a result of these established relationships, the CEO of THENSA had engagements with DHIK to secure placements at the technology transfer offices, which include incubators and science parks, in Germany.

Other activities during 2023, includes a series of workshops on Capacity Development of Technology Transfer Offices in South Africa, Workshop in March 2023 by LTU Business at Luleå University of Technology in Sweden; Workshop in June 2023 on the Training Programme for Technology Transfer Professionals in South Africa, and a Workshop in October 2023 on the Professionalisation of the Technology Transfer Profession.

The following universities in Germany has partnered with THENSA on this programme:

- 🌀 Wismar University of Applied Sciences, Technology and Design
- 🌀 Flensburg University of Applied Sciences
- 🌀 University of Applied Sciences in Saarbrücken, HTW Saar
- 🌀 TH Köln – University of Applied Sciences, Technology, Arts and Sciences
- 🌀 Esslingen University of Applied Sciences (Esslingen, Germany)

THENSA is confident that the identified international institutions will significantly contribute to the success of the MSC Programme for TTOs, which will certainly contribute to improving the effectiveness of performance of the 26 public universities in South Africa in order to commercialise innovations more efficiently, promote local economic development, and respond to societal needs. By enhancing the capacity of TTOs through research results, transfer and licensing of proprietary technologies and knowledge, universities will be able to contribute significantly better to the social well-being of all citizens of South Africa.



4.2.2 DSI-THENSA MASTERS AND PHD PROGRAMME FOR STAFF AT PUBLIC UNIVERSITIES IN SOUTH AFRICA

THENSA is implementing the following highly successful postgraduate capacity building programmes in Science, Engineering, and Innovation, based on the findings described in its performance indicator document and the ambitious DHET 2030 target of 75% of staff with PhDs by 2030:

- i) Bespoke PhD Programme
- ii) Bespoke Master's Programme
- iii) Supervisor Enhancement Programme

The above planned workshops have been scheduled to take place from February 2023 to November 2024.

4.2.3 ENTREPRENEURSHIP PROGRAMMES

Students are increasingly required to have skills and abilities which will increase their employability and become self-employed. Entrepreneurial education and training provide individuals with the ability to recognise business opportunities, gain self-esteem, knowledge, and skills and to act on them. It includes an opportunity to commercialise a concept, manage resources, and initiate a business venture. Entrepreneurs are critical for economic growth and development and to curb the high rate of unemployment in the country.

THENSA with the support of the DSI, embarked on a comprehensive entrepreneurial programme which includes training, support, and monitoring of students.

The following Entrepreneurship programmes offered by THENSA helped to facilitate the entrepreneurial mind-set of students and encourage self-employment. Having a culture to create a new business venture is a critical aspect of the entrepreneurial training and THENSA encourages students to take the risk of starting a business.

5 DAY FACE TO FACE ENTREPRENEURSHIP TRAINING (Aligned with the New Venture Creation Qualification at NQF level 5)

The purpose of the 5 Day Face to Face Entrepreneurial training is to develop the appropriate skills and knowledge required by the learners for the establishment and development of a small to medium business venture, and to address the economic, administrative, and behavioural (psycho-social) barriers that contribute to the success in starting and sustaining the venture. Small businesses are seen as one of the main drivers of economic growth, poverty reduction and job creation. However, with approximately five out of seven new businesses failing within the first year of establishment, the success of small businesses remains a challenge.

With funding from the DSI for the entrepreneurial training of *90 students from the 26 public universities countrywide*, three cities were identified for the regional training workshops i.e., *Durban (in 2022), Cape Town (in 2023), and Pretoria (in 2024)*.

The first training was held in Durban and included universities from the KwaZulu Natal and Eastern Cape Provinces. A diverse group of students (at undergraduate and master's level) participated in the training. They were nominated based on their business concepts, innovative ideas, and some with start-up businesses. It was a privilege to witness the growth of the students during the 5-day training which culminated in the presentation of their business concepts to a panel of judges (from the various industry sectors) in a Dragons Den Event. Each student received a certificate for participation, including the following special awards to students who were identified by the Panellists:

- a. Most Financially Viable Enterprise, awarded to Mr Mbuso Ngcongo from University of South Africa
- b. Enterprise with Growth Potential, awarded to Mr Siyabonga Gumede from University of Zululand
- c. Most Innovative and Creative Enterprise, awarded to Ms Makhosana Zulu from Durban University of Technology

Online Coaching and Mentoring Phase

The ultimate objective of the coaching and mentorship intervention is to facilitate the process of completing the full business plan that commenced during the training. Some of the areas covered during the coaching and mentoring intervention were:

- 🌀 **An online presentation by the Small Enterprise Financing Agency (SEFA)**
 - 🌀 **An online presentation by the South African Receiver of Revenue Services (SARS) on the Small Business Corporation Act that guides the SME (Small Micro Medium Enterprise) sector.**
- This is based on a specific request from students on tax compliance.

A **WhatsApp Group** was created with all students to facilitate regular interaction and engagement between the facilitators and THENSA. This was an excellent platform for peer learning, coaching and mentorship with the facilitators. The platform also functioned as a monitoring tool to establish student progress and the sharing of relevant information and opportunities.

There was an overwhelmingly positive response from students as to why they liked the programme, and they were grateful for the entrepreneurial experience.





8 WEEK ONLINE ENTREPRENEURSHIP PROGRAMME

THENSA In partnership with the Munster Technological University (MTU) in Ireland, designed and launched its Online Entrepreneurship Programme in August 2021 via the THENSA Online Learning Platform. Apart from the fact that this interactive programme provided students with the skills and knowledge necessary to start and run a successful business, it raised awareness on entrepreneurship and provided students with skills to run their own businesses from inception.

Over the course of six modules, students will explore what it meant to be an entrepreneur, why entrepreneurship is integral to economic development and how to start and run their own business. They had the opportunity to hear from like-minded entrepreneurial students in South Africa and Ireland who presented some of their insights and findings through each step of the programme. Unlike other entrepreneurship programmes, this course is designed to be practical and user-friendly, encouraging students to develop an entrepreneurial approach as they prepare to enter the business environments. Students will receive an online certificate of participation endorsed by MTU and THENSA upon completion of the programme.

THENSA Online Entrepreneurship Programme offers an opportunity to create a new generation of young people who will become job creators within their own communities, giving them the kind of opportunities that will make an impact on the growth of our economy.

THENSA received funding from DSI to offer this 8 Week Online Entrepreneurship Programme to 400 students from the 26 public universities for the period 2023-2024.

As the country addresses its numerous challenges, there is an urgent need for dynamic and decisive solutions that will address poverty and unemployment. It is our hope that the THENSA Online Entrepreneurship Programme will foster.



THENSA has partnered with the South African Public Colleges Organisation (SAPCO) to recruit 100 students from the TVET Sector to participate in the New Venture Creation (NVC) programme, funded by the DSI. The NVC qualification is accredited by the Services SETA.

The purpose of the NVC qualification is to develop the appropriate skills and knowledge required by a person for the establishment and development of a small to medium business venture, and address the economic, administrative, and behavioural (psycho-social) barriers that contribute to success in starting and sustaining the venture.

Students attempting this NVC qualification will be equipped with selected technical, business, managerial and personal skills, and strategies to help them succeed. The successful learner will develop a sound foundation for the application of these skills and knowledge to explore a diverse range of entrepreneurial opportunities.

The NVC training (over 18 months) will commence on **1 June 2023** and will be facilitated by THENSA's training provider. The students will receive a stipend from the Services SETA which will enable them to participate and successfully complete this qualification.

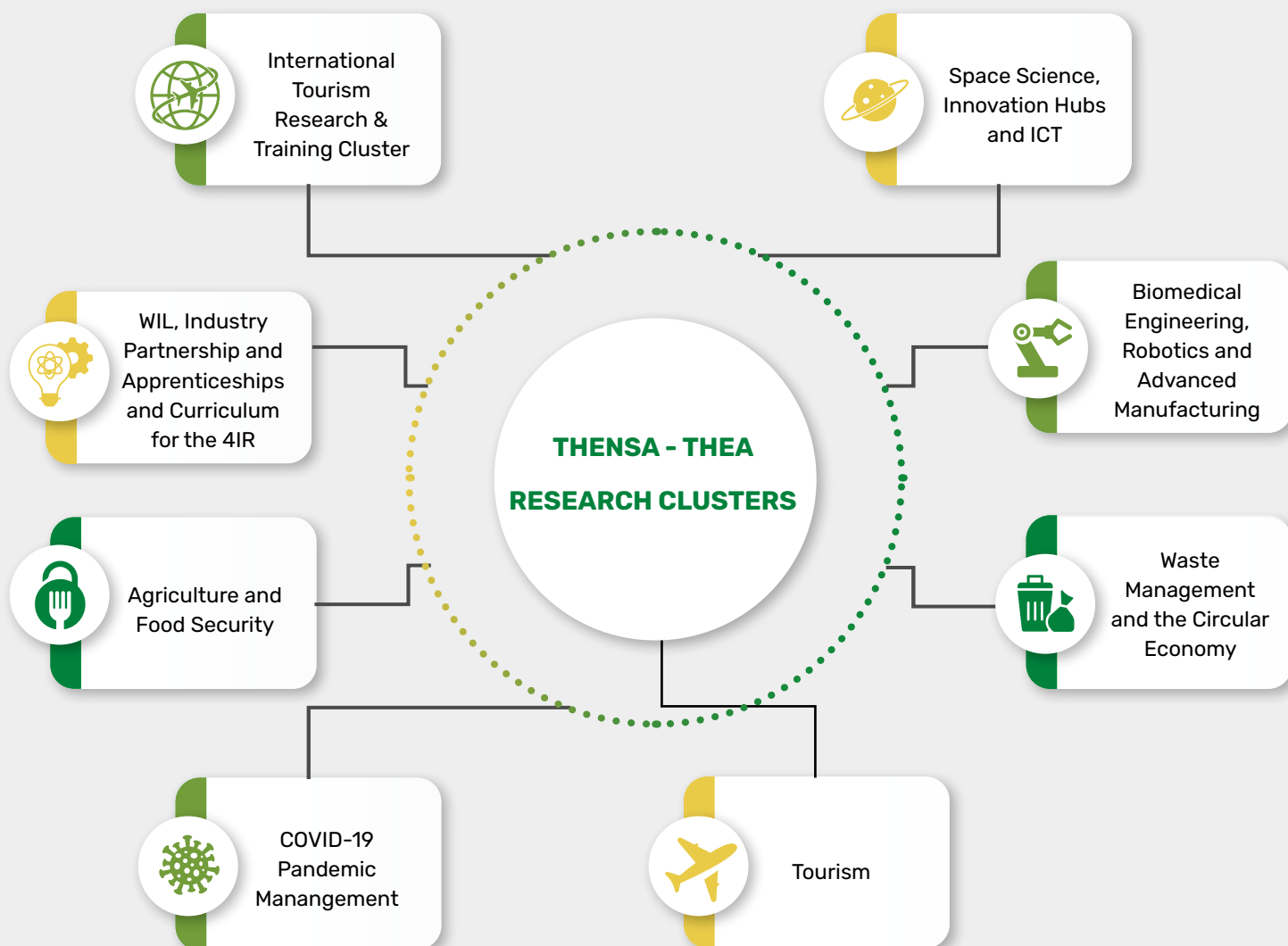
4.3 PARTNERSHIP WITH THE IRISH TECHNOLOGICAL HIGHER EDUCATION ASSOCIATION (THEA) AND THE IRISH EMBASSY

THENSA, THEA and the Irish Embassy has a longstanding relationship since 2016 which resulted in a number of joint-working groups in areas of mutual interest. Well-established engagements and research and development initiatives are ongoing between the Technological Universities in Ireland and the member institutions of THENSA. These initiatives are supported by the Irish Embassy in South Africa and the South African Embassy in Ireland.

The signing of the MOU between THENSA and THEA mapped the way for the development of collaborative research clusters and programmes of mutual interest, inter alia, technology transfer practices, tourism, entrepreneurship education, space science, food security, work integrated learning, promotion of staff and student exchanges, identification, application, and submission of joint funding through this partnership.

4.3.1 RESEARCH CLUSTERS

Funding received from the Irish Embassy in 2019 and 2020 allowed the members of the partnership to action the recommendations to varying degrees across clusters over the last two years. Below are the Research Clusters and a summary of the achievements to date including the activities and recommendations for the next phase of the funding to aim for self-sustainability after 2023-2024.



SPACE SCIENCE, INNOVATION HUBS AND ICT (Co-funded by CPUT, INR and the Umgeni Water)

- 🌀 **Development of Industry 4.0 technologies for deployment in space with a special focus on AI and Cybersecurity** Joint presentation at AfAS Session at the AERAP Virtual Conference: Data and Development Partnerships for Africa-EU in Astronomy.
- 🌀 **The use of unmanned aerial vehicles in the management of catchments** Feasibility study on use of drones for catchment management completed. A pilot study involving drone flights and water quality monitoring completed at 3 sites and a report produced. Briefing meeting on project held between SA and Irish partners. Partnership with Umgeni Water established.
- 🌀 **A South African Irish participatory approach to developing space science curricula: meeting the needs of the future and beyond.** The cluster is engaged in co-developing space science curricula for the sector and establishing a Space Academy; The partners have conducted a need analysis with the assistance of Industry partners and will visit the International Space University on a study tour, followed by a workshop to develop the curricula in South Africa with the Irish expertise. Partnership with industry consortium, ZASpace was established as an enabling mechanism.

Participating Institutions: Cape Peninsula University of Technology; Munster Technological University; Institute of Natural Resources NPC; Mangosuthu University of Technology; South African Radio Astronomy Observatory; Tshwane University of Technology; Vaal University of Technology; Walter Sisulu University; South-East Technological University.



The use of Additive Manufacturing to support COVID-Related Rapid Response

SA and Irish partners developed project proposal on rapid prototyping response to COVID-19 manufacturing needs. SA partners have received funding grants which will fund some of the collaborative work with Irish partners. FITCH Medical Device report received and feasibility study for commercialization's under way (start-up potential) CUT (Prof. Deon de Beer) completed a visit to various institutions in Ireland, with MTU as host. Prof Ger Kelly (MTU) will visit South Africa and also attend the RAPDASA Annual International Conference in Somerset West as part of the planned visit.

Participation Institutions: Cape Peninsula University of Technology; Central University of Technology; Munster technological University; Atlantic Technological University; Mangosuthu University of Technology; Technological University Dublin; Tshwane University of Technology; University of Zululand; Walter Sisulu University; Southeast Technological University.



WIL INDUSTRY PARTNERSHIPS AND APPRENTICESHIPS AND CURRICULUM FOR THE 4IR (Co-funder: Irish Research Council – New Foundations)

Enhancing work-integrated learning through South-North collaboration: a comparative analysis

Journal article in press at International Journal of Work-Integrated Learning "Enhancing work-integrated learning through South-North collaboration: a comparative analysis". Presentation to Science Forum South Africa in December 2020. Research grant obtained, and SA cluster travelled to Ireland in June 2022.

Participation Institutions: Cape Peninsula University of Technology; Central University of Technology; Munster Technological University; South East Technological University.

Strand 4 Irish Research Council Project (IN PROGRESS)

Cluster currently designing survey instrument to reflect/capture resilience of WIL during pandemic; Cluster conceptualised and pitched proposal for establishment of WILSA; Six universities participated (three from each country) in a survey-based study which was conducted from mid-November 2021 to January 2022. The aim of the study was to:

- Develop partnerships between Irish and UoTs relative to the investigation and further development of WIL, Industry Partnerships and Apprenticeships.
- Strengthen new THENSA partnerships through collaboration and networking activities in Ireland and South Africa.

- Explore current WIL management models, practices and policy within Ireland and South Africa in order to fully understand the context and challenges associated with the implementation of WIL at universities and industries.
- Co-develop new best practice guidelines, models, and frameworks (including policy) for WIL and WIL Partnerships.

Explore further related research activities and analysis of the data in Cape Town from 14-20 January 2023, including of a writing workshop.

Participation Institutions: Cape Peninsula University of Technology; Central University of Technology; University of Johannesburg; Munster Technological University; South East Technological University; Galway-Mayo Institute of Technology



WASTE MANAGEMENT AND THE CIRCULAR ECONOMY (Co-funded by NRF, Water Joint Programming Initiative and CSIR)

Development of biobased plastics Funding grants obtained from: South African National Research Foundation (2021-2023); Water Joint Programming Initiative (2018-2020); SA NRF Knowledge Fields Development grant (for workshop); Council for Scientific and Industrial Research Waste RDI Roadmap grant (2021-2022). Two publications: Science of the Total Environment; South African Journal of Science and One Book chapter on the Circular Economy was accepted for publication.

Creation of a South Africa-Ireland biohydrogen capacity building programme

Design courses/curricula to introduce hydrogen and fuel cell technology to students across the country, educating the scientists, engineers, and potential end users of tomorrow and to develop and train a workforce for the emerging hydrogen technology industry. The SA team in partnership with the Irish partners will develop curriculum materials, and educational offerings at various levels.

Participation Institutions: Cape Peninsula University of Technology; Central University of Technology; Durban University of Technology; Limerick Institute of Technology; Mangosuthu University of Technology; Tshwane University of Technology; University of KwaZulu-Natal; University of Zululand; Vaal University of Technology; Walter Sisulu University.



🌀 **A review of challenges and opportunities of agriculture and food security in the 4IR: A North-South perspective.** One article was submitted to a journal, Elsevier Global Food Security, for review.

🌀 **Developing strategies for mitigating dairy wastewater impact** - A Feasibility study on the use of low-cost biological solutions for treating dairy wastewater was conducted.

The project is in the second phase with collaboration between INR and DUT.

Participation Institutions: Central University of Technology; Munster Technological University; Institute of Natural Resources NPC; Mangosuthu University of Technology; Technological University Dublin; Tshwane University of Technology; University of KwaZulu-Natal; University of Zululand; Walter Sisulu University; South East Technological University.



COVID 19 PANDEMIC

🌀 **Priority setting for interventions in pre- and post- pandemic: A South Africa-Ireland Comparison** (Co funded by Irish Embassy/ THENSA and Department of Tourism)

Position paper produced by the South African team. 3 × Radio interviews by South African team on local radio stations. 2 Television interviews by South African team on local TV stations and 2 articles published in newsletter of South African Medical Association.

Studies completed and recommendations submitted to Irish Embassy and Department of Tourism for consideration.

Participation Institutions: African Centre for the Constructive Resolution of Disputes; Central University of Technology; Institute of Natural Resources NPC; Thorntree Coaching, Facilitation and Mentoring; UN High Commissioner for Human Rights; University of KwaZulu-Natal; University of Pretoria and University of the Witwatersrand.



THENSA was awarded a grant by the Irish Embassy in South Africa to establish six Research and Training Clusters, including the Tourism Research and Training cluster. Tourism Research and Training is an important offering by THENSA member institutions, and the training programme/qualifications curricula and work integrated learning component is designed with input from the tourism industry.

The grant, which focused on research and training, came at a time when the tourism sector was facing severe strain due to the global Covid-19 pandemic.

In the **first phase of the grant**, THENSA conducted a national environmental scan of its member institutions training programmes/qualifications to identify any gaps in research, skills/training, and capacity requirements to address the immediate and longer-term needs of this severely shaken industry and to understand the role and value of the Irish Tourism Education Gateway (TEG) Platform which serves both the tourism industry and academic sectors.

The findings of the study highlighted the need to:

- i. review our training programmes to better meet industry needs.
- ii. address the challenges presented by the 4IR.
- iii. find innovative ways to deal with these challenges; and
- iv. to provide and promote entrepreneurial skills for students embarking on careers in Tourism, especially post pandemic economic recovery, and renewal period.

The first phase of the grant project also included a study visit to Ireland in May/June 2022 by the Heads of higher education academic departments of Tourism at THENSA's member institutions, the CEO of SAQA, representatives of SA National Department of Tourism, and business/industry representatives.

The recommendations emanating from this visit to Ireland were as follows:

- 🌀 Review curricula in line with the new information provided and to present at a follow-up meeting in South Africa.
- 🌀 Develop a partnership through a Memorandum of Understanding (MOU) between the Department of Tourism and THENSA to ensure curriculum and training relevance.
- 🌀 Ensure all staff members are provided with training to ensure they are kept abreast of industry needs.
- 🌀 Establish the TEG in South Africa to support upskilling and reskilling of staff from the tourism industry.
- 🌀 Conduct research (specifically a tourism skills and training needs audit) in partnership with the Department of Tourism with regard to buy-in in respect of the TEG and to identify tourism training needs for employees in the sector.
- 🌀 Offer entrepreneurship short courses to tourism small, medium, and micro enterprises (SMMEs) in order to create jobs across the tourism value chain.
- 🌀 Conduct a follow up training programme for staff at THENSA member Institutions in Phase 2 of this project.
- 🌀 Conduct an exploratory study of selected tourism Industries in South Africa to identify areas requiring attention.
- 🌀 Explore the notion of a professional body to support ongoing upskilling and reskilling of employees within the tourism sector.

The follow-up programme in South Africa commenced with:

- 🌀 Site visits by the Irish partners to selected THENSA member institutions and tourism sites to examine the operations and staffing needs and requirements.
- 🌀 Undertaking a training programme and presentation by THENSA and partners on the changes made to curricula of tourism programmes based on input from Phase 1.
- 🌀 Input from the Department of Tourism

THENSA, Irish partners (Atlantic Technological University-ATU) and the Department of Tourism agreed on the following recommendations:

- 🌀 Sign an MOU with the Department of Tourism to indicate specific areas of cooperation.
- 🌀 Conduct a national study in partnership with the Department of Tourism to establish buy-in of industry and on courses that industry wishes to offer on the TEG platform.
- 🌀 Identify institutions to offer online programmes on the TEG platform.
- 🌀 Set up TEG platform at the Department of Tourism in partnership with Ireland.

- ⑥ Include the THENSA bespoke Online Entrepreneurship programme on the TEG.
- ⑥ Training for tourism lecturers, coaching and mentoring skills development, Continued Professional Development essential for success.
- ⑥ Develop opportunities with ATU to offer exchange programmes for teachers with industry and partners.
- ⑥ SAQA and THENSA to provide quality assurance expertise.






4.3.2 NEW RESEARCH AND INNOVATION CLUSTERS

The impact of collaborations is the demonstrable contribution that goes beyond research and academia to make contributions to the economy, society, culture, national security, public policy or services, health, the environment, and the overall quality of life. Importantly, the engagement with the Irish enabled the pooling of resources to create larger and more extensive networks of knowledge creation and innovations.

Increasing the international connectedness and depth of international engagement of research is fundamental to the long-term competitiveness of domestic and international research, and to ensure that research drives economic and social advancement, THENSA embarked on the following new strategic research clusters:

THE CIRCULAR ECONOMY RESEARCH INNOVATION CLUSTER - BIOHYDROGEN TO ENERGY PRODUCTION

The circular economy is a systems solution framework that tackles global challenges like climate change, biodiversity loss, waste, and pollution. The circular economy is based on three following principles, driven by design, and is underpinned by a transition to renewable energy and materials:

-  Eliminate waste and pollution
-  Circulate products and materials (at their highest value)
-  Regenerate nature

The research project which commences in 2023 aims to explore the use of bio hydrogen to:

- i) generate electricity using hydrogen fuel cells and stored hydrogen, produced by fermentation of sewage.
- ii) to develop curriculum to train capacity for the bio hydrogen industry as proposed by the President's Hydrogen Valley Project and the DSI Green Energy programme.

In addition to developing new technologies and innovations in partnership with our Irish partners and government, the project will yield capacity to populate the industry. The Project Partners are:

Tshwane University of Technology (Lead Institution), Dublin City University, Trinity College (Dublin), and Hydrogen Ireland, A municipal Research site (in Tshwane, Pretoria), Department of Environmental Affairs, Department of Science and Innovation.








CURRICULUM FOR THE 4IR: DEVELOPING A QUALIFICATION FOR LECTURERS AT UNIVERSITY: POST GRADUATE DIPLOMA “LICENSE TO TEACH PROGRAMME”

All lecturers in higher education are facing tremendous challenges due to the increased diversity of students, developments in the external environment, such as the need for high-level skills in the workplace, the digitalisation of everyday life, the emergence of new technologies for teaching, a growing demand for lifelong learning and hence an increasing demand from students for more flexible teaching through blended and online learning. SAQA argues that changes over the past 50 years to higher education systems require lecturers to be aware of the strengths and weaknesses of different teaching methods, how learning actually takes place, how to select and use technology appropriately and how to assess students.

Educational institutions across the globe face the challenge of not just striving to fill the current skills shortages highlighted by their National Skills Development Plans, but to also address the further competence needs highlighted by 4IR in the global context. A cursory search for what qualifies faculty to teach university at undergraduate and graduate level across countries suffices to establish that this must be one of the least regulated professions in the world in terms of required skills. THENSA with its partners, intend to develop a Post Graduate Diploma (1 year) and a short course (module from the Post Graduate Diploma) entitled “License to Teach” which will be credit bearing towards acquiring the Post Graduate Diploma.

The Project Partners are:

-  THENSA Member Universities
-  Irish universities (GMIT, LIT, MTU and WIT)
-  Department of Higher Education and Training, (SA)
-  SAQA
-  Irish Department of Education







SCIENCE PARK AND BUSINESS UNIT RESEARCH CLUSTER

The last decade has seen a growing realisation in Africa of the need to respond to developments in the global economy and in particular to take initiatives to break away from the dominant dependency on resource economies. The COVID-19 pandemic has re-directed the importance of innovation and commercialisation of research solutions for economic revitalisation, human development, and job creation.

The International Association of Science and Technology Parks (IASP) maintains that an entrepreneurial spirit and a solution-oriented mindset is key components in higher education and views the establishment of Science and Technology Parks as platforms to facilitate the production of knowledge and its transfer to the economy in the form of spin-offs, enhanced by the co-location of R&D university centres and high-level technology enterprises located on-site at universities.

An environmental scan provides a descriptive synopsis of the landscape of the Science and Innovation Park, Business Unit and Technology Transfer Office landscape at THENSA member institutions. Currently, the report does not endeavour to critically compare the infrastructure and activities of the said institutions but to provide an informative source document to be utilised by the stakeholders of respective institutions in order to facilitate future collaboration and interaction. An important assumption is made within the scope of this study that certain favourable conditions may as well be relevant for Science Park firms and thus, presumably making the present study interesting and valuable for a larger audience.

The activities listed below have been selected to review current practices at science parks to ensure success with commercialisation activities:

-  Facilitate a study, visit by the Irish to SA to and vice versa to identify joint business projects.
-  Host a workshop, post the study visit and present plans for the next 5 years
-  Identify and develop draft business plans for at least 3 proposed collaborative projects.
-  Develop training programmes for the establishment of ihubs at the Science Parks in SA in partnership with the Irish partners.

The Projects Partners are:

South Africa: VUT, TUT, CPUT, CUT and UKZN, Ireland: WIT, GMIT, MTU, LIT, Business and Industry Stakeholders, Department of Science and Innovation, Technology Innovation Agency, National Research Foundation.

4.4 PARTNERSHIP WITH THE DEPARTMENT OF LABOUR AND THE UNEMPLOYMENT INSURANCE FUND (UIF)

During the **First phase of the project**, 1174 learners were recruited by the Department of Employment and Labour's Public Employment Services (PES) offices. MILZET (THENSA's training provider) trained students in Beauty and Nail Technology, Hairdressing and Environmental Practice. 631 learners were successfully placed with host employers by THENSA's Placement Officers, after the completion of their theoretical training.

The **Second Phase of the project** commenced on 15 February 2021 and by 30 June 2021 and a total of 1641 learners were registered for training. The learners completed their theoretical training and 75% of the 1 641 learners who completed their theoretical training were placed with host employers. In addition, 759 learners were inducted and are waiting to be trained.

The **Third Phase of the project** is contingent on the extension of the Agreement between THENSA and the UIF. There is progress in pursuing the training of the remaining 759 students and 1174 (new recruits) in 2023.



4.5 PARTNERSHIP WITH THE EUROPEAN UNION - HIGHER EDUCATION REFORM EXPERTS SA

THENSA was awarded funding for the EU Erasmus+ Capacity Building in Higher Education programme in November 2020 and has collaborated with six of its member universities to implement the project.

Major milestones reached in 2022 include the following:

- 🌀 A study was conducted in year 1 of the project on institutional challenges which led to the purchase of equipment for facilitating 4IR-based teaching and learning at the six universities.
- 🌀 The first HERESA networking meeting (hybrid event) was held in Durban 24 Mar 2022 in conjunction with a training workshop (19 in-person attendees and 6 online attendees) with all partners in SA and EU including SAQA
- 🌀 Based on the recommendations of the Partners, a series of online dialogue inspired learning events took place on the “HERE-SA Café” platform. These series of thematic conversations involved all partners.
- 🌀 An opening/launch training event was held in Durban in March 2022 to unite the four core themes of the project: WIL, Entrepreneurship, Teaching for the 4IR and Competency Based Learning (CBL).
- 🌀 The first study visit of the programme was conducted in October 2022 to KTH Royal Institute of Technology in Sweden. The HERE-SA team engaged in curricula development for Work Integrated Learning (WIL) and WIL implementation. As a follow-up to study visit, the partners had a workshop in South Africa on WIL to discuss the development of a new network called WILSA.
- 🌀 The second study visit of the programme took place in Finland, in October 2022, and was hosted by TAMK (Finland). The visit focused on how the university approaches teaching and learning strategies, outcome-based learning, and specifically CBL. Special attention was given to approaches for curricula development, pedagogy, engaging industry partners, and evaluation of skills. The host university involved staff from different departments and services as well as faculty from different disciplines, staff from support structures and examined concrete cases and examples of both teaching approaches and student staff services related to CBL.
- 🌀 In March 2022 SAQA and HERESA engaged via virtual meetings to plan activities around the development of two policy briefs: Work Integrated Learning (WIL) and the revision of the National Qualifications Framework (NQF). A workplan for the development of the WIL and NQF policy brief was developed and shared with Partners on 15th June 2022 and the following additional events were held as part of the stakeholder consultation process:
 - Inception meeting for NQF level descriptors policy revision meeting was held on 15th August 2022.
 - Inception meeting for WIL Policy meeting was held on the 13th September 2022.
 - WIL Policy workshop was held on 1st December 2022.



Participants of the HERESA Sweden study visit standing outside the KTH Royal Institute of Technology in Stockholm (Sweden) in October 2022



Participants of HERESA Training Workshop and Partner Meeting March 2022

4.6 PARTNERSHIP WITH THE UK FOREIGN, COMMONWEALTH & DEVELOPMENT OFFICE (FCDO)

VENTURE BUILDER MODEL FOR ACCELERATING TECHNOLOGY INNOVATION AND COMMERCIALISATION WITHIN UNIVERSITIES OF TECHNOLOGY: RESEARCH AND INNOVATION SYSTEMS FOR AFRICA (RISA) PROGRAMME

In November 2022, THENSA in collaboration with the Cape Peninsula University of Technology (CPUT), received a grant aimed at piloting a deep tech Venture Builder model for accelerating technology innovation and commercialisation through the creation of a tech-ecosystem that includes top talent, leaders, investors, and government all banded together to create a stronger, more innovative, inclusive, and successful network. The deep tech Venture Builder model is designed using a participatory process that aims to accelerate innovation through interventions tailored on a set of key drivers of spin-off successes.

The current phase, for which funding has been secured, is directed at developing the Venture Builder structure and formalising partnerships and will kick-off in January 2023. In effect, this phase is directed at birthing a micro-innovation ecosystem. The funds have been secured through the Research and Innovation Systems for Africa (RISA) programme funded by the UK Foreign, Commonwealth & Development Office (FCDO) that aims to strengthen research and innovation ecosystems in Africa. The RISA Fund is jointly funded by two separate FCDO programmes – SRIA for research ecosystems and ATIP for innovation ecosystems and this activity is financed by the Government of the United Kingdom (His Majesty's Government) and implemented by Chemonics International Inc.

There exists a need to identify knowledge partners. Leveraging the opportunities provided by the South Africa Ireland bilateral trade agreement and the Irish based higher education institution's extensive knowledge and best practices in venture building provided valuable insights and makes a significant contribution to the design and successful roll-out of the venture builder model.

4.7 PARTNERSHIP WITH THE DEUTSCHES HOCHSCHULKONSORTIUM FÜR INTERNATIONALE KOOPERATIONEN (DHIK)

THENSA made a presentation at the DHIK Consortium meeting on 2 November 2021, where member universities expressed a keen interest to pursue further discussions in areas of particular interest such as sustainable development, renewable energy, agriculture, joint qualifications, etc. A follow up meeting was held between THENSA and DHIK on 24 June 2022 and a MOU will be finalised. A draft MoU has been received and will be circulated to all VCs for comment before finalisation. An opportunity to secure funding from GIZ through the German Embassy is being jointly explored by THENSA and DHIK to pursue projects for the training of TTO staff and joint qualifications at undergraduate and postgraduate levels.

4.8 THENSA GRADUATE EMPLOYABILITY APP

The GEA was successfully launched in 2021 with graduates signing in the programme from its member institutions. Subscriptions have increased in 2022.

Phase 4 is the most exciting aspect of the GEA development, and the most challenging. Intensive research indicated that the application would require certain application scopes which would allow access to the required LinkedIn data that would support THENSA's real-time employability tracking goals. The integration with LinkedIn that allows members to authenticate against GEA with their LinkedIn profiles, requires one such set of scopes, which serves as the starting point for the required tracking against LinkedIn.

When a GEA user authenticates successfully with their LinkedIn profile and continues to successfully register / subscribe as a graduate, a call is made to the mentioned service that fetches the user's public profile URL.

The data from the LinkedIn connector is reported on in the Performance Indicator Report and this, as well as the recommended automations (for which requirements are still being compiled by the Task Team) will form the final version of the THENSA PI Document within Phase 4 and also constitute the end of this phase. Phase 5 and 6 to follow.



Empower the minds of tomorrow!

The Graduate Employability Initiative.



GEA STRATEGY

Toward real time Graduate Employability Monitoring and Enhancement



4.9 STUDY VISIT OF THENSA VICE CHANCELLORS TO FINLAND - 29 OCTOBER TO 4 NOVEMBER

The objective of the THENSA Vice-Chancellors visit was as follows:

- ▶ Enhancement of existing partnerships and securing of new partnerships.
- ▶ Discussing the status and outcomes of current projects/programmes.
- ▶ Identifying new areas of mutual interest for future collaborations.
- ▶ Discussing and exploring partnerships with ARENE (Consortium of Universities of Applied Sciences).
- ▶ To meet with the Ministry of Education to share the work of THENSA in partnership with Finish Universities of Applied Sciences and to explore new areas of collaboration.

The following institutions were visited by the Vice Chancellors:

Haaga Helia University of Applied Sciences, Metropolia University of Applied Sciences, Tampere University of Applied Sciences, JAMK University of Applied Sciences, TURKU University of Applied Sciences, LAB University of Applied Sciences, Ministry for Education.



Outcomes of study visit and conclusion

🌀 The Vice Chancellors and members of the delegation had the opportunity to meet with the HERESA Team (including the South African Members) and the OBREAL partner, Elizabeth Colucci who gave a brief description of the programme and the outcomes and outputs of the workshops that took place.

🌀 **Enhancement of existing partnerships and securing of new partnerships**

The Vice Chancellors met with the Universities they have partnerships with and had discussions on the status and outcomes of their existing partnerships, and programmes.

🌀 **Areas of mutual interest were identified:**

- i. Mentorship and Coaching programme Setting up a team of trained Coaches and Mentors for the sector.
- ii. THENSA bespoke PhD Training Programme.

4.10 UNIVERSITY INDUSTRY PARTNERSHIPS

THENSA continues to engage with business and industry role players to explore and establish formal partnerships for the mutual benefit to business and member institutions.

4.11 PARTNERSHIP IN AFRICA AND BEYOND

THENSA continues its engagement with new partners to create opportunities for joint research, teaching and learning and staff student exchanges. The Association of Technical Universities and Polytechnique's in Africa (ATUPA) is an Associate Member of THENSA.



THENSA social media highlights

Higher Education Reform Experts South Africa (HERESA), articles and Q&As on members and partners were posted to the HERESA website. These included an article about the value of South-South-North cooperation with Elizabeth Colucci, International Projects Director for the OBREAL Global Observatory, Q&As with the various presenters for the HERESA Café sessions. In November 2021, episodes were recorded for the HERESA Podcast. The first series of the HERESA Podcast titled "Meeting of Many Minds: The Communities

of Practice”, involved an introductory episode on what a Community of Practice is, including four other episodes on the HERESA Communities of Practice: Curricula for the 4IR, Competence-Based Teaching and Learning, Work-Integrated Learning and Entrepreneurship Education.

The series titled “Young Academics on the Age of COVID-19”, was conducted with 12 early-career academics. The episodes focused on how they adapted their teaching modalities and pedagogical philosophies during the pandemic, what were some of their biggest challenges to students and what lessons were learnt and applied. THENSA will engage on the impact of the digital divide and the need for digital transformation in the context of higher education reform in South Africa.

▶ The Tourism Workshop 2022 was held at The Radisson Hotel in Durban, in partnership with the Department of Tourism, THENSA featured on a primetime broadcast on eNCA on the Tourism Gateway Platform (TEG) and the necessity to upskill and reskill tourism personnel.

▶ The Five-Day Entrepreneurship Programme in October 2023 in Durban and was funded by the DSI. Students were interviewed on their business ideas and highlighted on Facebook, Twitter, Instagram, and LinkedIn.

Some highlights include:

THENSA published press releases, newsletters and monthly blogs on the THENSA website and all social media platforms.

The THENSA International Conference 2022, which took place at Montecasino in Johannesburg, secured Dr JJ Tabane of eNCA’s Powerto Truth and climate justice activist, Sera Farista, as keynote speakers. In addition, the Chairperson of THENSA, Dr Chris Nhlapo, appeared on SABC’s. The Globe with Peter Ndoro. Journalist Edwin Naidoo covered the launch of WILSA in University World Africa News (UWN). Dr JJ Tabane’s keynote address and the conference appeared in Leadership Magazine. Our social media coverage (Twitter) for the conference resulted in 100k followers.



5. CONCLUSION

With the leadership of the Board and the CEO, the year 2022 was an eventful one for THENSA. The THENSA Team worked tirelessly to ensure that all the activities and projects achieved the desired outcomes.

6. THENSA SECRETARIAT



Dr Anshu Padayachee
Chief Executive Officer



Christelle Venter
Operations Manager

PROJECT STAFF



Kogie Pretorius
Project Coordinator



Dr. Ahmed Wadee
Project Coordinator



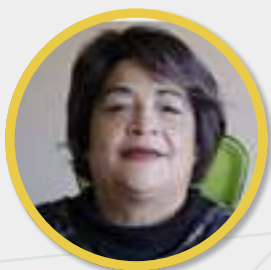
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Buntu Nondumo
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Khanya Mtshali
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Relations

7. THENSA FINANCIAL STATEMENTS

Technological Higher Education Network South Africa Non-Profit Company

(Registration number: 2020/842028/08)

Annual Financial Statements for the year ended 31 December 2022

Statement of Financial Position as at 31 December 2022

Figures in Rand	Note(s)	2022	2021
Assets			
Non-Current Assets			
Property, plant and equipment	2	426,569	8,937
Intangible assets	3	3,113	-
		429,682	8,937
Current Assets			
Trade and other receivables	4	8,278,043	87,646
Cash and cash equivalents	5	20,449,633	1,980,485
		28,727,676	2,068,131
Total Assets		29,157,358	2,077,068
Equity and Liabilities			
Equity			
Surplus earmarked for special projects		924,443	-
Accumulated surplus		7,011,270	(284,361)
		7,935,713	(284,361)
Liabilities			
Non-Current Liabilities			
Finance lease liabilities	8	154,849	-
Current Liabilities			
Trade and other payables	6	21,036,000	1,809,819
Other financial liabilities	7	-	551,610
Finance lease liabilities	8	30,796	-
		21,066,796	2,361,429
Total Liabilities		21,221,645	2,361,429
Total Equity and Liabilities		29,157,358	2,077,068

Technological Higher Education Network South Africa Non-Profit Company

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Annual Financial Statements for the year ended 31 December 2022

Statement of Comprehensive Income

Figures in Rand	Note(s)	2022	2021
Revenue		7,270,260	-
Other income		10,026,322	-
Operating expenses		(16,986,917)	(289,776)
Operating surplus / (deficit)	9	309,665	(289,776)
Investment revenue	11	479,513	5,415
Finance costs	12	(64,365)	-
Surplus / (deficit) for the year		724,813	(284,361)

Technological Higher Education Network South Africa Non-Profit Company

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Annual Financial Statements for the year ended 31 December 2022

Statement of Changes in Equity

	Surplus earmarked for special projects	Accumulated surplus	Total equity
Figures in Rand			
Total comprehensive deficit for the year	-	(284,361)	(284,361)
Balance at 01 January 2022	-	(284,361)	(284,361)
Surplus / (Deficit)	-	724,813	724,813
Transfer of surplus funds - WILSA project (2022 - 2023)	500,000	(500,000)	-
Transfer of surplus funds - Business Units and Science Parks Projects	500,000	(500,000)	-
Costs incurred - WILSA project	(45,000)	45,000	-
Costs incurred - Business Units and Science Parks Projects	(30,557)	30,557	-
Distribution received from SATN Trust	-	7,495,261	7,495,261
Total changes	924,443	6,570,818	7,495,261
Balance at 31 December 2022	924,443	7,011,270	7,935,713

Note(s)

Technological Higher Education Network South Africa Non-Profit Company

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Annual Financial Statements for the year ended 31 December 2022

Statement of Cash Flows

Figures in Rand	Note(s)	2022	2021
Cash flows from operating activities			
Cash generated from operations	14	11,430,082	1,432,460
Interest income		479,513	5,415
Finance costs		(15)	-
Net cash from operating activities		11,909,580	1,437,875
Cash flows from investing activities			
Purchase of property, plant and equipment	2	(502,265)	(9,000)
Purchase of other intangible assets	3	(3,113)	-
Net cash utilised in investing activities		(505,378)	(9,000)
Cash flows from financing activities			
Movement in other financial liabilities		(551,610)	551,610
Finance lease payments		121,295	-
Distribution received from SATN Trust		7,495,261	-
Net cash from financing activities		7,064,946	551,610
Total cash movement for the year		18,469,148	1,980,485
Cash at the beginning of the year		1,980,485	-
Total cash at end of the year	5	20,449,633	1,980,485

Technological Higher Education Network South Africa Non-Profit Company

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Annual Financial Statements for the year ended 31 December 2022

Detailed Income Statement

Figures in Rand	Note(s)	2022	2021
Revenue			
Subscriptions and marketing fees		5,858,667	-
Conference fee income		1,411,593	-
		7,270,260	-
Other income			
Irish Grant - project income		4,212,518	-
Recoveries of Finland visit		161,303	-
Recoveries of Research programme costs (Clarivate)		4,920,501	-
Univen - project income		732,000	-
		10,026,322	-
Operating expenses			
Accounting fees		(127,565)	(14,680)
Application of surplus funds		(210,180)	(82,080)
Auditors remuneration		(46,295)	-
Bad debts - Conference income		(296,722)	-
Bank charges		(17,437)	(1,978)
Business Units and Science Parks - surplus fund expenses		(30,557)	-
Clarivate - Loss on exchange differences		(409,855)	-
Clarivate research expenses		(4,510,644)	-
Computer expenses		(4,301)	-
Conference expenses		(1,858,064)	-
Consulting fees		(15,000)	-
Depreciation, amortisation and impairments		(84,633)	(63)
Employee costs		(1,767,538)	-
Finland visit expenses		(165,242)	-
Graduate Employability Application expenses		(562,431)	-
Insurance		(22,928)	-
Irish Grant - Project expenses		(4,168,939)	-
Marketing expenses		(202,580)	(23,300)
Meeting expenses		(163,421)	(11,807)
Online Entrepreneurship programme - annual fee		(374,954)	-
Capital Enhancement Programme (Univen)		(719,535)	-
Printing and stationery		(33,925)	-
Repairs and maintenance		(79,228)	(17,100)
Social media		(267,740)	(26,600)
Statutory and consulting expenses		(40,383)	-
Storage fees		(8,660)	(1,929)
Subsistence and travelling expenses		(96,196)	(33,109)
Telecommunication and connectivity		(62,635)	(780)
Travel - international		(277,749)	-
Utilities		(132,100)	(19,350)
WILSA - surplus fund expenses		(45,000)	-
Website development and maintenance		(184,480)	(57,000)
		(16,986,917)	(289,776)
Operating surplus / (deficit)	9	309,665	(289,776)
Investment income	11	479,513	5,415
Finance costs	12	(64,365)	-
		415,148	5,415
Surplus / (Deficit)		724,813	(284,361)





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Company Registration Number: 2020 / 842028 / 08