



ADDRESS BY THE MINISTER OF HIGHER EDUCATION AND TRAINING, DR BLADE NZIMANDE, ON THE OCCASION OF THE UNIVERSITIES SOUTH AFRICA 2ND NATIONAL HIGHER EDUCATION CONFERENCE HELD AT THE FUTURE AFRICA CAMPUS AT THE UNIVERSITY OF PRETORIA UNDER THE THEME 'ENGAGING UNIVERSITIES FOR A SKILLS INTENSIVE, INNOVATION LED ECONOMIC AGENDA'

6 October 2021

Prof Sibongile Muthwa, Chair of the USAf Board and Vice-Chancellor, Nelson Mandela University;

Prof Ahmed Bawa, CEO of Universities South Africa (USAf);

Chairs of University Councils, Vice-Chancellors, Deputy Vice-Chancellors, Deans, Heads of Schools and Academic Departments;

Higher Education Leadership and Management (HELM);

Esteemed international guests and speakers;

CEOs and officials from private higher education institutions and other organisations represented here today;

Officials from the Department of Higher Education, Science and Innovation and other Government Departments present today;

Academics and administration professionals;

Universities South Africa management;

Ladies and Gentlemen

Good morning

Thank you for the invitation to attend and address the 2nd Higher Education Conference which, as I understand, is jointly organized by Universities' South Africa (USAf) and the Council for Higher Education (CHE).

The Conference brings together a wide range of higher education stakeholders, including university leaders, academics, students and regulators to confer over critical issues facing higher education, including its dynamic linkages with society and the economy.

We are of course meeting in the midst of a crippling COVID-19 pandemic that erupted in March 2020 and spread to almost all corners of the earth, in the process disrupting many aspects for much of humanity, including social, economic and political life, as well as disrupting higher education.

Against this backdrop, the theme of this summit - '*The Engaged University*' – is both relevant and poignant to the challenges of our time. Its significance however transcends pure academic interests.

Our universities are a vital public resource and catalyst for an inclusive economic future. Therefore, key questions about how you engage, who you engage with, on what terms and for whose benefit, are as much a concern to your internal stakeholders as it is for society and economy.

I therefore hope that the outcomes of this summit will not only be of intellectual curiosity, but also of strategic and practical consequence,

including providing a framework for solution to pressing problems facing our country and humanity as a whole.

1. The Role of Universities in the Economy:

In recent years the question of the role and contribution of our universities in the *economy* – to its growth, development, transformation and the quest for a more equal and inclusive society – has come under the spotlight.¹

- How can we maximize and scale up the impact of our universities in the economy?
- How can we build new innovation bridges between higher education and the national system of innovation (NSI)? And,
- What can we do to promote more effective strategic partnerships between universities and the rest of the Post-School Education and Training (PSET) system?

Broadly speaking, universities are engaged in the economy in at least three major ways.

Firstly, they are involved in the production and supply of skilled professionals and other knowledge workers to diverse public, private and civil society markets – linking them into these labour markets in complex and dynamic ways.

¹ Universities of course perform much wider roles in society (cultural, social, scientific, etc) but my talk will focus on their economic engagement.

Yet it is important to state that we see the role of universities not simply as passively reproducing but actively transforming existing patterns of the social reproduction of labour – and indeed, I will argue, the very nature of labour itself.

Secondly, universities are also engaged in the production of knowledge (basic and applied) mainly via research and development, often (though not always) leading to new technologies and its diffusion in society and the economy – at local, district, regional, national and even in some instances, trans-national scales.

In this respect, I want to strongly argue that it is impossible to achieve an inclusive economy if knowledge and its relations of production (intellectual, cultural, epistemological) are also not simultaneously transformed.

Thirdly, universities are also economic entities in their own right. They are represented in large-scale campus infrastructure and contributing in all sorts of ways, including in paying rates and local taxes, providing rentals, student digs, staff salaries and benefits, and consumables amongst others to their local economies in towns and cities across South Africa.

In this regard, university leaders can play an important role in ensuring that local communities, especially black youth and women, are engaged in the production and supply of goods and services to our various campuses.

Government recognizes the pivotal role of universities as catalytic resources that must be harnessed at multiple levels and different ways of

economic development – local, district, regional, national and even trans-national.

No one of these scales of engagement, in my view, is more important than others; what matters is the historical necessity of utilizing all available platforms to stimulate transformative economic activity in our country.

The Department of Higher Education and Training (DHET) highlight this in the White Paper on Post-School Education and Training (2015) that calls on universities to:

1. undertake research to meet the economic and social needs of society;
2. building knowledge-generating partnerships with public and private enterprises...and technical innovation and economic advancement that can have a major impact on the strength and effectiveness of our economy'² .

Similarly, the Department of Science and Innovation (DSI) places much premium in its White Paper on Science and Innovation (2019) on the need for an integrated and collaborative National System of Innovation (NSI).

This is a shift in focus from R&D to innovation in order to boost the supply of high-level science, engineering and technology (SET) and technical skills in the economy.

² White Paper: Post-School Education and Training, 2015, p.10

The White Paper on Science and Innovation also expands the undersized research system; to improve the environment for innovation, and push for significant increases in the funding of the NSI.

But we are facing an unprecedented set of challenges today. Business as usual simply cannot work.

All of us must look for workable alternatives to the way we have done things yesterday.

The truth is, South Africa is standing at a crossroads and we have to self-critically reflect on how we use our resources – not simply pat ourselves on the collective back.

Universities, must ask themselves how they can do *more differently* – especially in the context of a crisis which presents both serious challenges and new opportunities.

2. Current Crisis: Challenges and Opportunities for Higher Education:

Colleagues, we are meeting at a time when the world is being battered by a series of convergent crises – of neo-liberal economic globalization, ecological degradation and multiple crises of social reproduction (inequality) – which collectively and cumulatively have all the hallmarks of a generalized global (planetary) crisis³.

³ Some geo-ecological writers term this the Anthropocene, akin to a distinct geological age marked by human activity as the dominant influence on climate and the environment.

The roots of the crisis are to be found in the most successful (and most destructive) economic system in the history of modern economics – capitalism. Today, even some of the high priests of capitalism concede to this reality.

Despite its many stunning achievements, as Karl Marx so forcefully described in *Das Kapital* (1867), the capitalist system has also presided over accumulation strategies which, over the last 250 years or so, had begun to push many of the earth's life supporting systems to a series of 'tipping points' – global warming, destruction of forests to make way for mass agriculture, pollution of terrestrial ecosystems, acidification of the world's oceans, amongst others.

The latest UN report on global warming concludes that we may have passed a point of no return and can no longer prevent the 1.5 degrees centigrade increase in global temperature, and all we can do is to work towards preventing any further rise in global temperatures.

The process of neo-liberal economic globalization, that was pushed relentlessly from around the end of the 1970's, acted as an accelerant on a process that began long before.

These 'tipping points' suggest, at a fundamental ontological level, what Marx tellingly termed a 'metabolic rift' – a rupture in the interaction between humanity and the rest of nature, flowing the destructive forms of capitalist production, thereby threatening the life-giving systems of the earth.

The current planetary-scale crisis is unprecedented in that it poses an existential threat not only to the future of the human species, but many other forms of life on Earth.

At its core, as the International Panel on Climate Change (IPCC) has starkly warned, has been steadily rising levels of global warming (climate change), unmistakably induced by human social and economic activity over the past 205 years of global industrial development.

Whilst there are natural drivers of climate change, it is now widely accepted that anthropogenic (human) factors are inducing rapid and very specific effects on the biophysical dynamics of the earth.⁴

At the same time, major advances in science and technology have been transforming many aspects of the global economy and bringing with it, huge disruptions in labour markets, production and consumption of goods and services across entire economies.

The Fourth Industrial Revolution (4IR) is characterized by the blurring of boundaries between the physical, biological and digital worlds, and infusing spectacular capabilities of artificial intelligence (AI), automation, robotics, blockchain and machine/deep learning tools in the process of capital accumulation and surplus extraction.

The three converging crises, together with disruptive effects of technologic change, are posing a multiplicity of critical challenges. Amongst the challenges is the increasingly precarious location of women

⁴ IPCC Special Report on Climate Change, 2018, United Nations

in society and communities, worsening gender inequalities, reinforcing patriarchy and the multiple crises of social reproduction.

Firstly, the world's most marginalized people are being pushed further from their means of livelihood, including jobs, land and assets, at the same time when we witness obscene levels of wealth accruing in the hands of a tiny minority.

Secondly, rates of change across multiple parameters (geological, climate, social, technological) are rapidly outstripping adaptations required – and unacceptably high costs being imposed on poor and peripheral economies.

Thirdly, unless and until there is a profound transcendence of the dominant 'model' on the basis of which much of the global economy is based, it is hard to see how we can avoid future catastrophe.

One thing is clear though: there cannot be a *'just transition'* if the mechanism generative of the world's most destabilizing social forces does not make way for a more humane, ecologically-sustainable world.

The South African economy, which is deeply integrated into this new global economy, is facing stark challenges with legacies of social inequality and economic exclusion built over three centuries of apartheid-colonial history.

Today, after much rancor, there is widespread agreement that substantial changes must be made to overcome deep structural barriers to economic participation by black, women and working people in the economy.

There is also agreement that a capable State and enabling environment are indispensable if we are to unleash the creative energies and ingenuity of millions of our people – just like we did in the fight against apartheid.

When the COVID-19 pandemic erupted, our domestic economy had already passed through two consecutive recessionary quarters, marked by major job losses in key economic sectors, including financial and manufacturing sectors. The pandemic simply added fuel to the fire.

Faced with the prospects of catastrophic failure of the domestic economy, President Cyril Ramaphosa announced a national State of Disaster in March 2020, to allow for extraordinary measures to fight the pandemic and keep society functioning.

As economic conditions worsened later in that same year, Government consulted widely with business and labour to develop a long-term economic strategy to move us beyond the immediate crisis - the national Economic Reconstruction and Recovery Programme (ERRP).

The Programme, as stated by the State President signals a major effort by Government to *“not merely to return our economy to where it was before the coronavirus, but to forge a new (inclusive) economy in a new global reality.”* (President CR Ramaphosa, 2020).

The challenges in the South African economy have been worsened by “sustained low levels of investment and growth, including a series of downgrades, including state-owned enterprises (SOEs)”.

To break the stranglehold of these challenges and other economic constraints, requires a plan that will help us take advantage of the opportunities presented by the global economy that is also on the mend” (ERRP, p.5).

The ERRP is structured along three phases:

- Engage and Preserve - which includes a comprehensive health response to save lives and curb the spread of the pandemic;
- Recovery and Reform - which includes interventions to restore the economy while controlling the health risks; and lastly,
- Reconstruct and Transform - which entails building a sustainable, resilient and inclusive economy.

The economic thrust of the ERRP is aimed at stimulating equitable and inclusive growth along nine (9) interventions:

- Aggressive infrastructure investment;
- Employment orientated localization, reindustrialization and export promotion;
- Energy security;
- Support for tourism recovery and growth;
- Gender equality and economic inclusion of women and youth;
- Green economy interventions;
- Mass public employment interventions;
- Strengthening food security; and
- Macro-economic interventions

The Ministry of Higher Education, Science and Innovation (HESI), which brings together two departments (DHET and DSI), plays a crucial role with its core mandate being the provision of the requisite skills, forms of knowledge and technological innovations.

HESI's strategic footprint is large – over 800 institutional entities spanning different parts of the country and operating in both public and private sectors, and involving over 1.8m students and 30 000 staff across the system.

The strategic capabilities of the DHET institutions, together with that of National System of Innovation (eg. Science Councils, agencies and professional bodies) provide us with a powerful set of resources to shift the ground around key national development goals.

How can we use this vast network of institutions, human talent and resources better to lift the *innovation floor* to achieve economies of scale in key sectors of the economy?

I think the ERRP provides us with an opportunity to test new approaches.

3. Strategic Considerations for Enhancing the Role of Higher Education in the Economy for the Future:

The two Departments under the Ministry have already committed to supporting the ERRP goals in a range of ways in line with their respective mandates.

DHET – under which universities fall - will be driving ten (10) cross-cutting initiatives, which includes amongst others:

- provisioning of short skills programmes (SLP's);
- workplace-based learning (WBL) programmes to respond to occupational shortages and skills gaps;
- adaptation of the Critical Skills List;
- strengthening entrepreneurship development programmes;
- embedding skills planning into economic planning processes;
- facilitating the use of the National Pathway Management Network (PMN) in the PSET system; and
- strengthening the post school education and training (PSET) system.

All these initiatives will be guided within the framework of the PSET Plan which the Ministry has released for publication in August this year.

The DSI – which has strong RDI linkages with universities – will be supporting the ERRP via a range of interventions in areas such as:

- Energy security – Hydrogen SA and Coal CO2 programmes;
- Industrialization – R&D tax incentives, Technology Localization, Technology Stations and Additive Manufacturing Programmes; South African Mining Extraction and Mandela Mining Precinct initiatives;
- Agriculture – Agro-processing and value chain development; and Water Technologies Demonstration Programmes (WADER);
- Infrastructure - Using SANReN and TENET model and Big Data analytics to assist SMMEs and Corporates;

- Green Economy - Imvelisi Enviropreneurs and STI4CE programmes;
- Food Security - Biosecurity Research Hub, Wheat and Beef Breeding Initiatives; Use of big data and digital decision support systems; Digital agriculture and Precision agriculture information system initiatives.

We need to figure out how our universities can create new and scaled-up RDI networks - involving HDI'S and rural universities – to plug into these innovative spaces. This can only happen if there is more effective cross-system networking and collaboration in deploying scarce resources.

The problem – and I have to be frank here - is that we still tend to function in ways emphasizing individual institutional gain over the imperatives of building a true national system.

There is also an obsession with global rankings and some of our institutions still tend to lapse too easily into old networks and coalitions of the strong, instead of encouraging a truly solidaristic national system of higher education.

On the other hand, we should acknowledge that there is significant (but not sufficient) collaboration within the sector.

As far as I know, all 26 universities work in USAf within different Strategy Groups and Communities of Practice in Teaching and Learning, Research and Development, Transformation. But should this not be extended *outwards*?

Should we not perhaps explore large-scale collaborative platforms between *all* our universities with our key Science Councils such as CSIR, HSRC, ARC to tackle national economic innovation challenges identified in the ERRP around food security, industrialization, pandemics?

Secondly, should we not build a more systematic alliance *between* universities and other parts of the PSET system – specifically, with TVET and CET Colleges?

This aspect is perhaps our weakest link in the entire system and constrains our capacity to mobilize across the ‘articulation scale’ in ways that can bring together all PSET institutional resources and human talent to tackle especially local-scale economic developmental challenges.

The District Development Model (DDM) provides a perfect opportunity for all our universities – regardless of their typological ‘status’ – to become embedded in districts in which their campuses operate.

It is in this context that my Ministry initiated the concept of district-level *Education and Innovation Precincts* to bring together otherwise disparate universities, TVET’s, CET’s, Setas, schools and other innovation players in particular parts of the country to focus resources and energies around socio-economic development issues.

We are planning three (3) such precincts in the first phase, the latest having been launched recently in the Imbali district in KZN.

At a policy and system-level, I believe the alignment of DHET and DSI under a single Ministry offers new and as yet unexplored opportunities for much greater synergy in our system.

We have already begun to experiment with ‘joining up’ of key policy levers to reduce wastage, optimize efficiency and exploit new opportunities more vigorously.

For example, in post-graduate bursary and scholarship funding, infrastructure funding, capacity development, and so forth. But this needs to be ‘drilled down’ at the *level of institutions* and sectors within the PSET system to build our national capacity for large-scale innovation.

We are also relooking at the NSI institutional innovation landscape in the light of the priorities set out in the White Paper on Science and Innovation (2019) and draft Decadal Plan.

The Ministerial Task Team Report on the Higher Education, Science, Technology Innovation Institutional Landscape (HESTIIL) was recently submitted to the Ministry and we have been studying it carefully.

The Report makes some radical recommendations on recreating and expanding the capacity of our STI capabilities including the idea of a new Research and Innovation Foundation.

We will be releasing the report for public comments soon. I urge you to engage with it in the light of some of the issues raised above.

There are many immediate and specific socio-economic challenges facing our country and they require urgent and imaginative responses, including from our higher education sector.

For example, our country currently faces the urgent task of rebuilding our sovereign capacity in the production of particularly human vaccines in the face of the devastating COVID-19 pandemic which has left us extremely vulnerable - to vaccine hoarding and its use for chauvinistic and imperialist interests.

We have vowed that this must never happen again.

For this reason, Government has assigned my Ministry to lead a process, in conjunction with all relevant branches of the State, as well as the private sector, to build a strategically-feasible level of sovereign capacity for the development of vaccines, therapeutics, diagnostic and epidemiological surveillance tools - not only in respect of the COVID-19 threat, but against future pandemics.

We are encouraged by the initiatives of at least four of our universities on the vaccine research front.

I however would like to see *all* universities mobilized across the vaccine, therapeutics, diagnostics, pharmaceutical and disease surveillance value chain – from discovery science, upstream drug development and design, formulation science, engineering and logistics to build a diversified and competitive national industry.

We see our universities as forming part of a broad-based innovation platform that fully draws on all forms of knowledge, including crucially, Indigenous Knowledge Systems, alliances involving traditional medicinal practitioners, SMME's, social enterprises and cooperatives.

Another opportunity for much larger-scale cross-sectoral collaboration is presented by the Hydrogen SA project - which aims to develop our industrial competitiveness in renewable energy production and its absorption across the economic landscape.

The current strategy already engages four (4) of our universities in various aspects such as systems engineering, infrastructure, fuel cell storage and hydrogen catalysis.

The potential value chain is vast – and we must mobilize and expand capacity of a much wider cross-section of our institutions in the innovation pipeline with its different industrial pathways.

Finally, we have to prepare for a future in which we are able to carry out our different missions during times of extreme stresses, for an example, pandemics, climate-related and other natural disasters).

The COVID–19 crisis, as you know, brought the sector to a dramatic halt at some stage, forcing us, with great difficulty but commendable ingenuity, to reboot our activities.

Out of this adversity was born a whole new array of innovative platforms driving digital and hybrid teaching and learning and research work to continue.

Perhaps we need to take a look at the feasibility of building on this overarching national Digital PSET platform, powered by AI tools, to enable the entire sector, from universities to TVET's and Community Colleges to assemble large-scale collaborations across the system.

Beyond teaching and learning support, it might be possible to use such a platform to drive the innovation agenda more smartly – bringing universities, business, labour and 'grassroots innovators' together to work on the big NSI Missions identified in our draft Decadal Plan, which includes aspects of:

- education and skills for the future;
- nutrition for a healthy population;
- harnessing the potential of ICTs;
- health technologies to treat and prevent ill health;
- sustainable energy technologies;
- the circular economy and improving exports through the high-technology sector.

As I conclude, let me make one final reflection. A crisis is usually an opportunity to reinvent oneself in a process of 'creative destruction' (to borrow from Joseph Schumpeter, the Austrian economist).

Given the devastating crisis unleashed by COVID-19 and thinking of possible unprecedented new challenges of the future technological disruption, climate change and Inequality crisis, what radical changes should we bring about in the sector to enable it to become not just

sustainable for its own reproductive needs, but also a more capable catalyst for major breakthroughs in the economy and society?

Are there parts of the system – including the way in which our 26 universities perform their mandates - that we should ‘rewire’ differently to enable it to function as a ‘system’ rather than the sum of its parts and leveraging such system-level capabilities to more competently deal with the big challenges?

Perhaps, this is a topic for debate and further dialogue.

I thank you and wish you well with the Summit.

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