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STRATEGIC PLANS FOR THE FISCAL YEARS 2015-2020 AND ANNUAL PLANS FOR THE 2015/16 FISCAL YEAR OF THE DEPARTMENT OF SCIENCE AND TECHNOLOGY (DST) AND THE NATIONAL ADVISORY COUNCIL ON INNOVATION (NACI)

1. INTRODUCTION

In the Department of Science and Technology's Strategic Plan for the Fiscal Years 2015-2020, the Minister of Science and Technology, Naledi Pandor, has clearly articulated the direction to which the Department will catapult itself in order to fulfil the Department's mandate, which is to realise the full potential of science and technology in social and economic development, through the development of human resources, research and innovation.

The Minister has highlighted the global economic importance of Africa and has called for the cultivation of an innovative culture and entrepreneurship, especially among the youth in order to position Africa as a contributor to problem solving by providing new solutions to challenges that we face. Amongst these challenges we could mention diseases, inequality, poverty and unemployment.

The Department of Science and Technology (DST) has expanded its focus to include the upliftment of the African continent when it comes to innovation. The focus is not only to provide human capital and modernisation of research and development (R&D) infrastructure, but to emphasise on innovation and capacity building in Africa. This is a great move by the DST given the ailing South African economy and the burden of poverty and unemployment in the country and in the region.

There are five priority areas that the Minister has highlighted, and these are:

- Human Capital Development focusing on gender and racial imbalance, to produce 5000 PhDs per annum;
- Boosting government-business-university investment on research and development (R&D), to increase gross expenditure on R&D from 0.8 percent to 1.5 percent of Gross Domestic Product (GDP) by 2020, to attract foreign investment as well;
- Develop entrepreneurial skills and the culture of innovation in order to develop new products and services for the economy, to provide necessary instruments for the protection of intellectual property and for the de-risking of technology and commercialisation;
- The Square Kilometre Array (SKA) radio telescope will put South Africa on the forefront of human exploration of the universe and its origins;

- Promoting science, technology and innovation in Africa and reinforcing African capabilities.

2. THE NATIONAL SYSTEM OF INNOVATION

It is stated in the Strategic Plan that "If the South Africa economy is to advance along the trajectory set out in the National Development Plan (NDP) and reduce poverty, it will require a strong, coherent and effective National System of Innovation (NSI), working in a coordinated manner to achieve national priorities".

It is important to emphasise again in this document that the issue is that the NSI is not a domain of the Department of Science and Technology (DST) alone, and it cannot continue to be. The NSI is a broader intergovernmental and a multidisciplinary ball game with which this country needs to properly handle. Indeed DST is the custodian of the NSI, however in order to remedy the lack of coordination within the NSI, all relevant players need to work together to elevate the importance of science and technology, research and development, and industrial innovation in driving our economic growth and competitiveness. The 2014-2019 Medium Term Strategic Framework (MTSF) alludes to the fact that the NSI needs better coordination.

"Research institutions and the national science and innovation system must be coordinated and collaborative".

The DST has identified ways in which the NSI could contribute to the reduction of inequality, poverty and unemployment:

- TIA's Technology Stations Programme and Technology Localisation Programme to ensure that Small and Medium Enterprises (SMEs) increase their turnover and secure better contracts with big firms;
- Develop R&D-led industries to improve the South African technology balance of payments and help reduce the account deficit;
- Support Masters and PhD students though the DST-NRF internship programme;
- Commercialisation of new innovations;
- Enhancing the standard of living in marginalised communities, e.g. by providing innovative technologies for the basic education of visually and hearing impaired, and providing innovative and appropriate off-grid sanitation technologies for rural and per-urban areas;
- Piloting innovation-enabled local development through community-based processing of traditional medicine, cosmeceuticals and nutraceuticals.

These are excellent programmes, but the problem is the fact that DST is not a service delivery department at all; DST plays a supporting role to other government departments. It is important that an environment and or policy is created to enable market absorption or penetration of locally developed innovations, once they are available, in order to ensure that

the investment that has been channelled to the relevant R&D can be returned. It is important that implementing departments absorb these technologies for large scale use instead of purchasing from other countries while there is a local alternative.

The issue of transformation in the NSI is important for economic growth. The majority of the South African population is yet not fully participating in the R&D-led innovation landscape, let alone in the research community.

The issue of the development of the R&D-led industries is crucial for economic development in South Africa and the region. Failure to effectively complement our resources based economy has been the key impediment to the diversification of the South African economy. The Medium Term Strategic Framework (MTSF) 2014-2019 proposes the Emerging Industries Action Plan, which will be led by DST. This could initially be developed from the Centres of Competence (CoC) Framework of the DST by providing high end commercial funding and or partners for promising initiatives ready for commercialisation.

Issues for consideration:

- It is not clear from the Budget how funding for the Offices of Technology Transfer (OTTs) have been allocated. Indeed the OTTs are based in the universities to exploit Intellectual Property (IP) emanating from research activities and are funded through the National Intellectual Property Management Office (NIPMO).

- It is also not clear how much of the NRF allocation goes to Centres of Excellence (CoEs). These CoEs are funded through the NRF for a period of 10 years to develop new knowledge and technology of high quality in areas of strategic importance. How much is allocated to these CoEs from the NRF budget?

- And how is the knowledge and technology that these CoEs develop converted into products and services if NIPMO is getting such a small amount of funding for the support of IP management?

- What is the role of the Department of Trade and Industry (DTI) in the commercialisation value chain alluded to above in encouraging private industrial firms' involvement in R&D to ensure that the technology being developed in the CoCs gets the necessary support to enable market penetration?

- What measures has the Department put in place to ensure that the CoC model is properly implemented and that targets for this programme are set properly?

- Would the Emerging Industries Action Plan stated in the MTSF follow on from the CoC Framework? NACI should draw up a high level structure of the DST's efforts and instruments from R&D, proof of concept, commercialisation to market so that gaps can be identified.

- What is the budget for the CoC programme; the CoC Framework was developed as an internal document in 2012. When is the public seeing a new framework?
- On the issue of transformation in the NSI, what has been the findings of the DST regarding the leakage within the PhD pipeline/track
- What is being done between DST and the Department of Higher Education (DHE) to make a career in science attractive as a career in the industry, starting with employment benefits for individuals pursuing PhDs, especially those from designated groups?

3. REFERENCES

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