

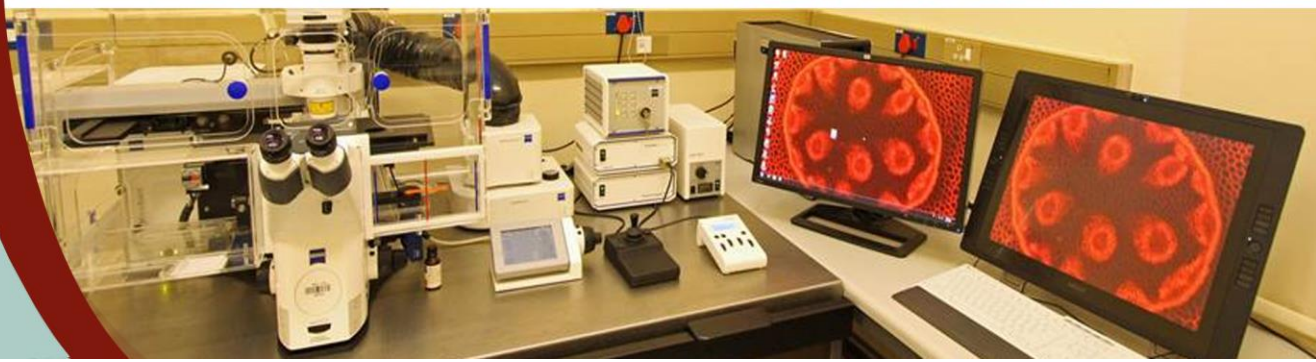


ARC • LNR

BUSINESS PLAN

2016-2017

AGRICULTURAL RESEARCH COUNCIL



*Displayed on the front cover, from **top to bottom**, are examples of the ARC research outputs & focus areas: **Russian Wheat Aphid** (*Diuraphis noxia*) feeding on a wheat leaf. The Russian Wheat Aphid is considered to be a serious pest of wheat in the dryland summer rainfall production region of South Africa; **the Madiba Protea**, is a *Protea cynaroides* cultivar, our national flower, named after our beloved former President Nelson Mandela, on occasion of his 80th birthday in 1998; **The measurement of the P8 fat thickness of a beef carcass**, as part of investigating the edible yield of a carcass. The measurement of fatness is one of the traits recorded during the genetic evaluation of bulls aiming at breeding livestock that can produce high quality affordable beef; **The Zeiss PALM4 Laser Capture Micro-dissection Microscope (LCM)** is one of the cutting edge infrastructure that allows for more targeted sampling of biological material for genomics and other downstream analysis. The instrument is used for targeted sample dissections upstream of the Next Generation Sequencing platforms run at the ARC Biotechnology Platform.*

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Agricultural Research Council

Business Plan

for

2016 / 2017

FOREWORD

It gives me pleasure to present the Business Plan for the Agricultural Research Council (ARC) for the financial year 1 April 2016 to 31 March 2017, which is presented in terms of the Agricultural Research Act, 1990 (Act 86 of 1990 as amended by Act 27 of 2001) and the Public Finance Management Act, 1999 (Act 1 of 1999, as amended by Act 29 of 1999).

During the period October - December 2015 and 25-27 January 2016, the ARC commenced its Business Planning process by reviewing its progress against the first year of the approved Strategic Plan (2015/16 – 2019/20), its current Business Plan (2015/16), as well as considering the recommendations and associated action plans that resulted from the recently concluded ARC Institutional Review. The overall outcome from this comprehensive review culminated in the development of this Business Plan for the financial year 2016/17 reporting period. In so doing, the ARC considered both successes and challenges experienced in delivery against its strategic intent; and reflected extensively on its alignment to the national priorities reflected in the National Development Plan – Vision 2030 (2011) (NDP).

Informed by the NDP, recent policy and strategy developments, led by the sector departments in the agriculture and science and technology space, were comprehensively examined and the contribution of the ARC identified and benefits arising from the work and focus of the ARC were formulated to inform the performance data reflected in the Business Plan for 2016/17; which among others included the following:

- Department of Agriculture, Forestry and Fisheries – Agricultural Policy Action Plan (2014 - 2019);
- Department of Agriculture, Forestry and Fisheries – Strategic Plan (2014/15 – 2018/19);
- Department of Science and Technology - National Bio-Economy Strategy and associated frameworks (2013);
- Department of Trade and Industry – Industrial Policy Action Plan 3 (2013 – 2016);
- Department of Rural Development and Land Reform – Rural Development Strategy (2013);
- 2014 – 2019 Medium-Term Strategic Framework (MTSF)

Arising from the above, the ARC Business Plan for financial year 2016/17 reflects an intent to contribute substantively through both research and development, technology transfer and dissemination as well as information sharing initiatives to the following national priorities:

- a) Employment and job creation across the full agricultural and agro-processing value chain;
- b) Improved agricultural production, productivity, competitiveness and sustainability;
- c) Agricultural transformation and improved equity in the agricultural sector;
- d) Enabling the country to respond and adapt to climate change concerns (water, land, energy and waste) and sustainable natural resource utilization; and,

- e) A business strategy that ensures a well governed and sustainable organization.

The ARC ensures that agricultural scientific research outcomes, results and publications are translated into technologies and products that have practical value (commercial and non-commercial) to the users; thereby contributing to sustainable development of South Africa. Often this impact extends beyond national borders as informed by the greater role of the ARC in international research and development as well as training initiatives. In this regard, the ARC cannot be examined within the same context and criteria as Universities and other Higher Education Institutions.

The ARC is expected to provide scientific leadership in the agricultural sector, particularly towards the benefit of resource poor and smallholder farmers as well as commercial enterprises, so as to support an inclusive economic growth and development. In this context, the ARC plays an essential role in achieving its mandate as the principal national agricultural research institution in South Africa, requiring it to provide two distinct yet mutually supportive sets of services, namely:

- 1) State funded (Public Good) research and development and related services that are funded through the government Parliamentary Grant; and,
- 2) Contract research and development and related services (self-funded services), where the user pay principle applies.

I would like to take this opportunity to express the ARC Council's commitment to support the organisation as it continues to concentrate on excellent service delivery to our country and its people, through the performance focus and intent outlined in this Business Plan for the 2016/17 reporting year.

A handwritten signature in black ink, appearing to read "Sibusiso Vil-Nkomo", written over a horizontal line.

Prof Sibusiso Vil-Nkomo

Chairperson of the ARC Council

February 2016

OFFICIAL SIGN-OFF

It is hereby confirmed that this Business Plan for the Agricultural Research Council (ARC) for the 2016/17 financial year, with the three-year medium-term forecast:

- was developed by the Council and management team of the ARC in consultation with staff and stakeholders of the Entity;
- takes into account all the relevant legislation, policies and other mandates for which the ARC is responsible;
- accurately reflects the performance targets which the ARC will endeavour to achieve given the resources made available in the budget for 2016/17;
- was prepared in line with the ARC 2015/16 – 2019/20 Strategic Plan and its associated amendments; and
- considered the recommendations and associated action plans that resulted from the recently concluded ARC Institutional Review.

This Business Plan is hereby presented as the guiding document for the Agricultural Research Council for the 2016/17 financial year. As required in terms of the Agricultural Research Act, 1990 (Act no. 86 of 1990 as amended by Act 27 of 2001) and the Public Finance Management Act, 1999 (Act no. 1 of 1999 as amended by Act 29 Of 1999)

Recommended by:

Mr G Maluleke
Chief Financial Officer

Signature:



Dr S Moephuli
Chief Executive Officer

Signature:



Approved by Council:

Prof S Vil-Nkomo
Chairperson of the ARC Council

Signature:



Date: February 2016

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ABBREVIATIONS AND ACRONYMS

ABC	Activity-Based Costing
ADC	Agricultural Development Centre
AFSR	Agricultural Farming Systems Research
AG	Auditor-General
AGIS	Agricultural Geo-referenced Information System
ANPA	Agricultural National Public Assets
APP	Annual Performance Plan
ARC	Agricultural Research Council
AU	African Union
BBBEE	Broad Based Black Economic Empowerment
BCP	Business Continuity Plan
BP	Business Plan
CA	Conservation Agriculture
CEO	Chief Executive Officer
CFO	Chief Financial Officer
COP	Communities of Practice
CRDP	Comprehensive Rural Development Programme
CSI	Corporate Social Investment
CSIR	Council for Scientific and Industrial Research
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DST	Department of Science and Technology
ENE	Estimate of National Expenditure
EPWP	Expanded Public Works Programme
ERM	Enterprise Risk Management
EWP	Employee Wellness Programme
FET	Further Education and Training
GM&ES	Government Wide Monitoring and Evaluation System
HCM	Human Capital Management
HEI	Higher Education Institute

HRD	Human Resource Development
IA	Internal Audit
ICT	Information and Communications Technology
IGR	Inter-governmental Relations
IGDP	Integrated Growth and Development Plan
IMS	Information Management System
INTERGIS	Integrated Recording and Information Systems
IP	Intellectual Property
M&E	Monitoring and Evaluation
MISS	Minimum Information Security Standards
MOU	Memorandum of Understanding
MTEF	Medium Term Expenditure Framework
MTSF	Medium Term Strategic Framework
NARF	National Agricultural Research Forum
NEPAD	New Partnership for Africa's Development
NDP	National Development Plan
NGP	New Growth Path
NT	National Treasury
OHS	Occupational Health and Safety
PFMA	Public Finance Management Act
PMDS	Performance Management and Development System
POA	Programme of Action
PPP	Public & Private Partnership
R&D	Research and Development
RTI	Research Technology and Innovation
SADC	Southern African Development Community
SEDA	Small Enterprises Development Agency
SDA	Service Delivery Agreement
SET	Science, Engineering and Technology
SETA	Sector Education Training Authority
SG	Strategic Goal

SLA	Service Level Agreement
SMME	Small, Micro and Medium Enterprises
SO	Strategic Objective
SP	Smallholder Producer
SPSP	Strategic Plan for Smallholder Producers
TT	Technology Transfer

PART A: STRATEGIC OVERVIEW

1. INTRODUCTION

The Agricultural Research Council (ARC) was established as a Public Entity on 1 December 1990 under the Ministry of Agriculture (now reconfigured as the Ministry of Agriculture, Forestry and Fisheries).

The ARC was established in terms of the Agricultural Research Act, 1990 (Act no. 86 of 1990, as amended by Act 27 of 2001), from which it derives its mandate; and is listed as a Schedule 3A Public Entity in terms of the Public Finance Management Act 1 of 1999 (as amended) (PFMA). The ARC's core mandate is to act as the principal agricultural research institution in South Africa so as to conduct research and development, technology development and transfer (dissemination), including information dissemination in the agricultural sector.

The Council (Board) of the ARC is the Accounting Authority in terms of the PFMA. The Council provides leadership and oversees strategic direction, so as to enhance shareholder value and ensure the ARC's long-term sustainable development and growth. In fulfilling its responsibilities, the Board is supported by the ARC Management in implementing the approved strategic and corporate plans and policies.

The critical role of agricultural research in fostering sustained competitiveness and profitability in the sector, in the face of a world economy that is rapidly transformed into a knowledge and network economy, is acknowledged both within the scientific community and in Government. Evidence has suggested that an increase in public investment in agricultural research will enable South Africa's economic development through sector transformation, competitiveness, sustainable development and growth. Further, the agricultural sector is a priority research sector in South Africa due to its relevance in terms of food security, economic multiplier effect with significant impact on job creation, competitiveness of enterprises, sustainable growth, rural development and political stability.

The role of agricultural research and other considerations significantly influenced the positioning of the ARC within the South African and International context, which in turn, informed the development of the 2015/16 – 2019/20 Strategic Plan of the ARC. These agricultural and environmental considerations have been formulated into strategic drivers, and the major interventions required to address the identified priorities have in turn been converted into strategic goals, corresponding Key Outputs and Budget Programmes and then an aligned programme of action for the period to 2019/20.

For ease of reference, this Business Plan restates the Strategic Intent and Framework, Strategic Goals, Key Outputs and aligned Budget Programmes. It then provides a more detailed breakdown of the programme performance data which is intended to steer the organisation in its strategic direction. In addition, the Business Plan also incorporates the financial outlook for the MTEF. This Business Plan for financial year 2016/17 serves as the second year of implementation of the Strategic Plan for 2015/16 – 2019/20 and further incorporates the recommendations and associated action plans that emanated from the recently concluded ARC Institutional Review.

In its planning the ARC has specifically aligned its outputs to respond to the government's Medium Term Strategic Framework (MTSF) outcomes 4, 7, and 10 primarily to support leadership role of the

Department of Agriculture, Forestry and Fisheries. However, the nature of the ARC's mandate requires of the organization to contribute towards the success of MTSF outcomes 5 and 6, to support other lead government departments and institutions.

Six strategic goals have been developed to enable the ARC to effectively focus and prioritize its options in delivering on its mandate and respond to sector needs and expectations as follows:

- 1) To generate knowledge and technologies that will enhance the efficiencies in crop based agriculture;
- 2) To generate knowledge and technologies that will enhance the efficiencies in livestock based agriculture;
- 3) To generate knowledge and technologies for the conservation and utilization of natural resources;
- 4) To generate knowledge, solutions and technologies for food safety, quality and improved efficiencies in the agriculture value chain;
- 5) Translate research outputs in order to generate knowledge, facilitate decision making and contribute to the transformation in the agriculture sector; and,
- 6) Apply resource management practices towards a high performing and visible organization.

These strategic goals serve as the highest level of ARC institutional organization; inform the research focus, programme orientation and performance data articulated within the context of SMART (specific, measurable, achievable, realistic and time-bound) principles. Critical to the success of ARC in delivering on its measurable objectives will be the appropriate allocation and alignment of required resources (people, infrastructure, finances and other supporting systems). Resource allocation, mainly the budget allocation is presented in the within the MTEF period and further estimation over the period of this strategic plan.

2. OVERVIEW OF ORGANISATIONAL PERFORMANCE - 2014/15

Overall, the Agricultural Research Council has succeeded in delivering outputs in accordance with pre-determined objectives, key performance indicators and targets for the financial year 2014/15. In particular, the organization has continued to provide scientific and technical solutions to the agricultural sector that enable sustainability and competitiveness of enterprises as well as development of small holder farmers. A brief overview of performance of the ARC during financial year 2014/15 is provided below as a basis to inform planning and implementation during 2016/17.

2.1. Disseminating Scientific Solutions for Agriculture Development

Climate change has been predicted to adversely impact on agriculture production. In recent years South Africa has experienced variable rainfall patterns that have also changed in spatial distribution. To enable South Africa to respond to the adverse impacts of climate change and ensure food security, the ARC has focused on the development of scientific solutions that would make agriculture resilient. In the financial year 2014/15 the ARC distributed 10 000 (ten thousand) seed packs of drought tolerant maize cultivar, DroughtTEGO, to smallholder farmers for planting in various provinces. DroughtTEGO is a product of research and development through a partnership known as Water Efficient Maize for Africa (WEMA) that involved the African Agricultural Technology Foundation (AATF), International Centre for Maize and Wheat Improvement (CIMMYT), national agriculture research organizations of Kenya, Tanzania, Mozambique, Malawi, Uganda and an international seed company. Results indicated that farmers who received and planted the maize cultivar experienced on average 50% increased yields when compared to conventional varieties available on the market.

2.2. Research and Development for Scientific Solutions for a Developing Economy

Knowledge generation and dissemination is a critical component of agricultural development. Accordingly, the ARC has continued to generate and disseminate knowledge through various means such as peer reviewed scientific publications, popular commodity magazines, farmer field day study groups and electronic media (radio, television etc) among others. When compared to prior year (2013/14), the number of peer reviewed publications in 2014/15 increased by 32% where more than 400 journal articles were produced. This includes the increased number of publications with ISI rating (impact factor) higher than 2.0 suggesting improved quality of science and publications. These outcomes are particularly significant as they form the basis of technology development, information dissemination and possible development of new innovations; which in turn, indicates the ARC's excellence in research and development.

2.3. Human Resources Enabling the Success of Research and Development at ARC

The ARC values its human resources for effective delivery and sustainable impact on agriculture development. During financial year 2014/15 the ARC embarked on a number of initiatives to provide the best environment that would encourage excellent performance.

To mitigate the lack of critical mass of skills in South Africa, the ARC continued to invest substantially in the training and development of the employees. Such training and development includes formal training at higher education institutions that includes the use of National Research Foundation, Technology for Human Resources Industry Programme (THRIP) and Agri-SETA support. Through these initiatives, the ARC successfully engaged more than 338 students to participate in its flagship Professional Development Programme (PDP) and other industry funded programmes. In all instances, ARC researchers have been involved in the supervision of students together with collaborating scientists at universities.

2.4. Financial Management for a Successful and Sustainable ARC

Effective, efficient and transparent management of finances is an important indicator for organizational sustainability and success. The ARC continues to strive for ensuring that its customers and the shareholder derive optimal value from the utilization of financial and other resources.

In order to provide reasonable assurance against material losses and misstatements of financial results, the ARC reviewed its materiality framework for improvement of internal controls. The ARC's internal financial controls comply with the Public Finance Management Act, 1999 (Act no. 1 of 1999, as amended) (hereafter referred to as PFMA) and the organisation's Enterprise Risk Management Framework. Further, management recognized the importance of a good control environment for effective management of risks, improving performance, enhancing governance and enlisting stakeholder confidence in order to strengthen the organization's reputation. Therefore, in the year under review particular emphasis was placed on managing business risk and its possible impact on continuity.

As part of continuous improvement, the ARC introduced changes in its performance information management system in financial year 2013/14. A dashboard system was used throughout the year to enable management to monitor and report on performance information. This has enhanced the ability of management to ensure accurate and timely reporting of performance on all pre-determined objectives and targets as well as monitoring any non-compliance or failures. The ARC has also implemented a new Enterprise Resource Planning system to enhance the controls around the finances and supply chain.

Conducting business in financial years 2013/14-2015/16 has been very challenging for the ARC due to poor economic conditions and in some instances poor agriculture sector performance. The ARC PG has been reduced by R233m over the MTEF 2014/15-2016/17. The first cut of R40m was implemented during 2014/15. The final cut is to come into effect on 1 April 2016 at R116m. This continues to place the ARC in a difficult position to generate external income. The economic conditions have also affected the client base of the ARC from which the external income was raised in the past. Although in the past

the ARC was able to deliver on its mandate with limited resources, the sustainability of cost containment measures implemented in the past is a big challenge. This will adversely impact on the ability of the organization to deliver solutions for agriculture development and economic growth.

The allocation granted to the ARC for infrastructure renewal and equipment replacement remains highly inadequate. The ARC continues to face a huge backlog that requires additional funding over the MTEF period. It is estimated that ARC's ageing infrastructure (obsolete equipment linked to specific research laboratories), capital replacement and maintenance costs require capital injection of R480 million over the MTEF. Infrastructure and capital equipment investments would enable the ARC to effectively deliver on its mandate, thus positively contribute to sustainable growth of the agriculture sector and economic growth.

2.5. ARC 2007-2014 Institutional Review

During financial year 2014/15, the ARC Council established an Institutional External Review to cover the period 2007 to 2014. Following international good practice a panel of experts drawn from South Africa, Australia, Netherlands, Uganda, United States of America and Zimbabwe as well as a team of strategic advisors were appointed to conduct the review.

Primarily, the Review ascertained that the ARC continues to meet its mandate, mission and objectives as outlined in the Agriculture Research Act, 1990. The Review also ascertained that, for the review period, the ARC has stabilised and strengthened its governance and executive management functions when compared to 2006/7. The ARC has also made commendable progress on fiduciary matters with clean and unqualified audits; has made exponential progress in human capital capacity building since the previous Review and the approach is both structurally and strategically commendable; and the ARC has now established a track record of impact with smallholder agriculture. However, the ARC is facing severe challenges that threaten its mandate and gains. The main threats include the imminent retirement of several key senior scientists in the absence of successors; a depreciated and poorly maintained research infrastructure; poor working relations with some key stakeholders; a declining financial base; and a bureaucratic culture that detracts from a climate of innovative science. Nonetheless, partnerships with provincial governments have improved, resulting in several success stories with impact in areas such as honeybush, indigenous chicken, irrigation pedal power, sweet potatoes and others.

There are also several overarching findings and conclusions that the ARC Board must pay special attention to. The ARC did not follow up sufficiently on the previous (2005) Review recommendations, and a more systematic process of follow up is highly recommended for the 2015 Review. Some of the issues from the previous review include the need to improve the organisational culture so as to produce high level "thought leaders" with national and international gravitas. This is because the ARC is not perceived as a leader in the agricultural sector, despite recognition of its research quality. The scientific culture can do more to enable innovation and transformation. Currently the main organisational culture is more of a top down bureaucratic one reminiscent of a government department rather than a semi-independent scientific organisation. The Board has to address the poor relationship and partnership with DAFF and other key science entities. And although the ARC is increasingly positioning and engaging with the provinces, this could be more strategic and could avoid

overlap with extension. No communication and marketing strategy exists for the ARC, and this is a critical factor in repositioning the ARC as a modern, service-orientated organisation. A further matter of importance and critical urgency is the fact that the ARC has no effective succession planning for scientific leadership in areas of crop and livestock sciences, nor in the increasingly important science involved in addressing the impact of climate change on agriculture. Overall the ARC lacks capacity for strategic and foresight analysis.

PART B: STRATEGIC INTENT OF THE ARC

The political, economic and social context of South Africa and the Southern African Region discussed and considered in the new Strategic Plan 2015/16 – 2019/20, which was reviewed during June – December 2014, sets the context within which the ARC creates its impact. The ARC Strategic Plan then outlines the mandate, role and strategic intent of the ARC. During the 2016/17 planning process, it was not intended to revise or redraft this well-considered framework, unless changes in the environment and/or the legislative framework required such amendments.

The strategic intent of the ARC, informing both the future development of its 2015 – 2020 Strategic Plan and this 2016/17 Business Plan, is summarised below.

3. ECONOMIC ASSESSMENT OF ARC OPERATING ENVIRONMENT

The 2016-2017 financial year will begin with a gloomy outlook for the global economy, with expectations that recovery will be lower than anticipated, following the disappointing growth in 2015. The International Monetary Fund (IMF) forecasts global growth rates of 3.4% in 2016 and 3.6% in 2017. World Bank estimates forecast the possibility of a growth rate less than 3%, raising concerns about the possibility of a global recession looming in the horizon. Previous forecasts on the growth of the major world economies have been revised downwards for 2016. The IMF forecasts growth in advanced economies to rise by a mere 0.2 percentage point in 2016 to 2.1%, and hold steady in 2017.

Emerging and developing economies also face weak growth prospects amidst continued low commodity prices and reduced flows of trade and capital. Emerging and developing economies account for a growing share of world output and if they remain depressed, they will halt global growth. According to the IMF, the Chinese economy's growth is expected to slow to 6.3% in 2016 and 6.0 % in 2017 largely due to weaker investment growth and rebalancing of the economy. The revision to previously projected growth rates for the global economy and a number of other emerging and major economies is a result of the depressed oil prices, low commodity prices and a slowdown and rebalancing of economic activity from investment and manufacturing toward consumption and services in the Chinese economy, Additional factors are the geopolitical and domestic strife in a number of countries and a strengthening US dollar.

In sub-Saharan Africa, economic growth is projected by the IMF to be 4.0% in 2016, and 4.7% in 2017, reflecting downward revisions of forecasts by 0.2% and 0.3% respectively. South Africa's economic growth prospects remain significantly below the projections for the region. The IMF outlook for January 2016 projects that the South African economy will register growth rates of 0.7% for 2016, and 1.7% for 2017, reflecting downward revisions on previous projections by 0.6% and 0.3% respectively. Local estimates place the expected growth rates at 0.3% for Quarter 1, 0.5% for the Q2, picking up to 1.3% in Q3 and 2.75% in Q4. The challenge of getting South Africa's economy growing at a sufficiently good rate remains and is linked to a number of other socio-economic challenges feeding off the slow growth dilemma. These include low commodity prices, the rapidly depreciating rand, the 2015 El Nino induced drought that is expected to continue for a while as well as the effects of slowing growth in major trading partner economies.

The dynamics in the agricultural sector remain closely linked to what is happening in the general economy. The drought experienced in the 2015/2016 season which was even more severe than the previous year will have profound effects on the agricultural sector in many aspects that include food security, farm incomes and farming debt. Agriculture's contribution to national GDP is expected to progressively decline as the year goes on. The country is expected to import between 5-6 million of maize worth over R20 billion in 2016 to mitigate the effects of the drought. Failure to import maize would see the country running out of white maize by September 2016, and maize prices substantially increasing. As of January 2016, the March contract for white maize was at a peak of R 5,296 (\$315) a tonne on South African Futures Exchange (Safex). Wheat and soybean imports are also expected to increase in the year. Consequently food prices are expected to escalate, with the cost of a food basket for a four member household projected to rise by up to 25%.

Increasing pressure on the national fiscus as a result of changes in the economic outlook and shifting priorities by the national government, and by DAFF, will likely result in a continuing decline in investment in agricultural R & D in the medium term. The ARC has already experienced two consecutive years of significant cuts in budgetary allocations, negatively affecting its research programmes and operations. In pursuit of agricultural growth, increased investment in research and development (R&D) is a requirement. The value of R&D to development is recognised as a driver of knowledge propelling economic growth and innovation. Generally, the impact of agricultural R&D, is positive, indicating a substantial return on investment for the funder and it is argued further that knowledge is the most strategic resource for growth in today's globalised economy. Moreover, with improved scientific capacity and knowledge, private enterprise can flourish. Given South Africa's need for employment creation and economic growth, and the contribution which agriculture offers, sufficient levels of state support for the ARC and its R&D efforts is imperative. Through investment in research, the sector can expand and new opportunities for growth can emerge.

The ARC, as the country's premier agricultural research institution continues to undertake research that has significant impact on the South African economy, and other national imperatives such as food security and equity through smallholder farmer development. The ARC has registered positive investment returns through measurable impact from its research and development efforts. This is particularly important considering that research is a costly undertaking. In addition to past research on the impact of ARC research, more evidence of the impact of ARC's R & D investment continues to be produced through the impact studies conducted by the Economic Analysis Unit. An analysis on the costs and benefits of developing and commercialising Plant Breeders Rights (PBRs) for three summer grains: maize, dry beans and groundnuts, established that to develop a maize cultivar would cost the ARC between R35 and R57 million, depending on the breeding methodology used. The benefits of the ARC's grain breeding programme outputs continue to outweigh their costs, and in fact, with evidence that a maize breeding programme can potentially finance itself.

Some of the impact studies completed in 2015 include the following:

- The impact of the ARC's peach and nectarines breeding research programme over a period of 41 years (1971-2012) was analysed. Results showed that an increase in peach and nectarine research investment was associated with an increase in production of peaches and nectarine in the sector. The supply response model used showed that the impact associated with a 10% increase in research investment, ranged from 3.1% to 12.5%. The marginal internal rate of return (MIRR) of the peach and nectarine research programme was calculated to be 55.9%.

The high MIRR was justified by the observation that the peach and nectarine industry experienced exponential growth in its annual value of production while there was a decrease in land area in the period considered in the study.

- Analysis of the impact of the vegetable research programme showed that despite the decline in research funding to VOPI, researchers managed to adapt to the changing funding structure and focus on the needs of clients who were willing to identify their research needs and make a contribution towards the research costs. In addition, increased efforts by the national government to support smallholder agriculture required the institute to allocate part of its parliamentary grant to research that would benefit the smallholder agricultural sector, thus reducing investment allocated to other forms of research. The marginal internal rate of return to vegetable research was estimated at 39.68%. This result suggests that for every R100 increase in vegetable research investment, the marginal returns to the vegetable industry is about R39. This rate of return is significant, indicating that vegetable research conducted at the institute over the years has generated benefits to the vegetable industry.
- The relationship between research investments and production output in the specific case of the South African plum industry for the period from 1980 to 2012 was also investigated to evaluate the rate of return on plum research in South Africa. The estimated MIRR for plum R&D investment in South Africa was 14.53%. The results of this study imply that research and development efforts for plums were beneficial to the agricultural sector and to the South African economy. The study also showed that the effects of R&D investments in plum research are felt immediately and the highest returns are experienced in the fifth year. In a ten year lag, significant relationships between R&D investments and output were found in all the years.

The effort in assessment of the impact of the ARC's R&D interventions on the sector and society will continue. Several studies already prove that publicly funded research is responsible for growth in agricultural productivity, and the economic analysis unit will focus significant effort on further determining the rate of return to public investment in the organisation and agricultural R&D in general. Accurate attribution of R&D benefits will be used to inform industry stakeholders on their valuable investment. Project level impact studies as described above will continue over the next five years, whilst the strategic information and data on the ARC's investments, and the returns on these investments, will be captured and made available for thorough scientific analysis. Also envisaged is the use of modelling techniques and higher level studies to establish the impact of the organisation as a whole on the industry and society.

The AU Agenda 2063 highlights agriculture as a key sector for supporting Africa's growth and development. In this high level instructive document, the focus is on modernising Africa's agriculture to be more productive profitable and attractive to the continent's youths and women, using science, technology, innovation and indigenous knowledge. The Ordinary Session of the Science, Technology and Innovation Strategy for Africa 2024 (STISA-2024) was adopted as the continental framework for accelerating Africa's transition to an innovation-led and knowledge-based economy within the overall framework of the AU Agenda 2063.

African agriculture needs to be brought to a sound footing and be able to achieve sustainable levels of intra-regional trade while adequately mitigating against potential impacts of weather-related shocks. The Science Agenda for Agriculture in Africa (S3A) charts a path for organisations to work together in using science to develop sustainable solutions for Africa's challenges. The thematic areas are grouped into four categories: sustainable productivity in major farming systems, food systems and value chains, agricultural biodiversity and natural resource management, and responses to mega trends and challenges for agriculture in Africa. Furthermore, the S3A is underpinned by three cross cutting themes, where the application of modern science will play a major role in Africa's agricultural transformation:

- Sustainable intensification, as an organising framework for enhancing productivity, at all scales of production.
- The potential for modern genetics and genomics to give better understanding of gene function, leading to more specific targeting of genetic improvement in agriculturally important species of crops, livestock, fish and trees.
- Foresight capabilities, including strategic planning, modelling, and analysis of 'critical technologies', as a means of systematic analysis and interpretation of data and perspectives to better understand trends and future challenges.

There is a clear opportunity for the ARC to support continental agricultural growth and development initiatives. It is therefore important that the ARC also strategically aligns itself appropriately. The ARC has therefore taken a long term view in its approach to its strategy and its Vision 2050 takes this continental strategic planning framework to its core. The strategic priorities in STISA-2024 have specific research and innovation areas identified to support them. The first priority which is focused on eradicating hunger and ensuring food and nutrition security requires research in cultivation techniques, seeds, soil and climate as well as conservation of natural resources. This remains the focus of the ARC's work well into the future. ARC's strategic goals which address knowledge generation and development of technologies for crops, livestock and natural resource management are perfectly aligned with these continental objectives. The ARC's continued participation in initiatives such as ProIntensAfrica will also ensure that the ARC remains a valuable partner in achieving these objectives. This particular initiative is well aligned with the cross cutting themes of the S3A because it explores partnerships with Europe for sustainable intensification in African agro-food systems. It is expected to produce a long-term research and innovation partnership that will develop improvements in the food and nutrition security and the livelihoods of African farmers by exploring and exploiting the rich diversity of pathways leading to sustainable intensification

4. THE LEGISLATIVE MANDATE OF THE ARC

At the apex of the legislative mandate informing the work of the Agricultural Research Council is the South African Constitution which requires that all spheres of government work together to address poverty, underdevelopment, marginalisation of individuals and communities and other legacies of apartheid and discrimination.

More specifically, the mandate of the ARC is derived from the Agricultural Research Act, 1990 (Act no. 86 of 1990, as amended by Act 27 of 2001) (hereafter referred to, as the Act). In terms of the Act, the Agricultural Research Council (ARC) is mandated to promote the agricultural and related sectors through Research, Development and Technology Transfer. The Act further defines:

- **Research** as the furtherance, accumulation and improvement of knowledge in the agricultural and related sciences through original and other investigations and methods of a scientific nature with the advancement of agriculture as its object;
- **Development** as activities by which knowledge acquired through research is translated into products and utilised; and,
- **Technology Transfer** as the transfer of knowledge, techniques and processes for the application thereof.

The objects of the ARC outlined in the Act are to conduct research, drive research and development, drive technology development and transfer (dissemination) of information in order to:

- promote agriculture and industry;
- contribute to better quality of life; and
- facilitate/ensure natural resource conservation.

Further, the Act states that in order to achieve its objects, the ARC may:

- a) undertake and promote research, development and technology transfer in connection with:
 - the optimal utilisation of the agricultural resources and the improvement of the production capacity of such resources;
 - the rehabilitation and improvement of the agricultural resources;
 - the opening of possibilities and the generation of new knowledge to solve particular problems;
 - the improvement of the nutritional value and quality of agricultural products;
 - the pollution of the environment and the prevention thereof in respect of agriculture;

- the improvement of existing techniques and the creation of new techniques for the processing of agricultural products and to improve the keeping quality of perishable agricultural products.
- b) utilise the technological expertise in its possession and make it generally available;
 - c) publish information concerning its objectives and functions, and establish facilities for the collection and dissemination of information in connection with research and development;
 - d) establish and control facilities in those fields of research, development and technology transfer which the Council may from time to time determine;
 - e) promote cooperation between the Republic and other countries with regard to research, development and technology transfer; and
 - f) cooperate with persons, institutions and associations undertaking research, development and technology transfer in other countries.

In the 2016/17 annual planning process, there have been no significant changes to the ARC's legislative mandate reflected above, and changes are rather at the level of policy and strategy informing the work of the ARC.

It is within this context then that the ARC summarises its purpose and strategic intent as follows:

ARC STATEMENT OF PURPOSE:

In accordance with the need to focus on national development priorities, the ARC conducts agricultural research and development and drives technology development and dissemination in order to:

- ***promote sustainability and equitable economic participation in the agricultural sector;***
- ***promote agriculture development and growth in related industries;***
- ***facilitate sector skills development and knowledge management;***
- ***facilitate and ensure natural conservation;***
- ***promote national food security; and***
- ***contribute to better quality of life.***

Based on this understanding of its purpose, the ARC vision, mission and values have been formulated to provide overall direction and inspiration in meeting and exceeding the objectives of the Act. The legislated requirements have been fully incorporated into the formulation of the key drivers, strategic goals and strategic objectives of the ARC.

5. THE VISION OF THE ARC

In delivering on its mandate, the ARC has the following vision:

Excellence in agricultural research and development

The ARC vision statement underscores a number of key issues necessary for its achievement:

- The importance of both basic research and applied research capabilities;
- The need for a strong partnership model to supplement the ARC's capacity and capabilities;
- The need to develop the internal capabilities of the ARC through targeted programmes;
- The need to transfer and disseminate the products or research results of the ARC in order to facilitate technology adoption in agriculture, so as to improve the competitiveness of clients; and
- The need to focus on ensuring that the agricultural sector (including resource poor farmers) is increasingly sustainable.

6. THE MISSION OF THE ARC

In achieving the above vision, the ARC describes its mission as:

The Agricultural Research Council is a premier science institution that conducts research with partners, develops human capital and fosters innovation to support and develop the agriculture sector.

The mission reflects the understanding that the term "agricultural sector" is broad enough to accommodate forestry and fisheries as the ARC's role in these sectors is emerging.

7. THE ORGANISATIONAL VALUES OF THE ARC

To drive its core strategy, the ARC appreciates that values identify the principles for the conduct of the institution in carrying out its mission. The ARC values define a citizen-oriented approach for producing and delivering its services in line with the *Batho-Pele* principles, and the key behavioural attributes which underpin the value system reflect an organisation which strives to "*maak-n-plan*" by finding solutions to agricultural challenges.

The people of the ARC plan to deliver their strategy while working within the framework of the following values:

Truth:	Incorporates honesty and integrity. The ARC shall conduct its business in a transparent and ethical way towards its employees, stakeholders and shareholder;
Accountability:	Incorporates responsibility. The ARC shall accept responsibility and accountability with respect to employee well-being, occupational health and safety (OHS), environmental sustainability, and agriculture;
Respect:	Includes equity, diversity and dignity. The ARC shall conduct its business with respect for our colleagues, clients and stakeholders;
Growth:	Includes equity, rewards and recognition. The ARC shall ensure equity in terms of race, gender, creed, fair treatment, training and development to all its employees, stakeholders and shareholder;
Excellence:	Incorporates empowerment and innovation. The ARC strives to conduct R&D in an efficient, effective, professional and accountable manner; and
Trust:	Includes ethics and transparency. We shall ensure and foster trust among our employees, stakeholders and shareholder.

8. THE STRATEGIC GOALS OF THE ARC (OUTCOME-ORIENTATED GOALS)

Six strategic goals have been crafted in order to enable the ARC to effectively focus and prioritise its options in delivering on its mandate and so as to respond to the above strategic framework; as follows:

- 1) To generate knowledge and technologies that will enhance the efficiencies in crop based agriculture;
- 2) To generate knowledge and technologies that will enhance the efficiencies in livestock based agriculture;
- 3) To generate knowledge and technologies for the conservation and utilisation of natural resources;
- 4) To generate knowledge, solutions and technologies for food safety, quality and improved efficiencies in the agriculture value chain;
- 5) Translate research outputs in order to generate knowledge, facilitate decision making and contribute to the transformation in the agriculture sector; and
- 6) Apply resource management practices, towards a high performing and visible organisation.

The strategic goals are framed as statements that describe the outcome expected in the agricultural sector as a result of ARC intervention; and align fully with the National Outcomes, but also align to the relevant sector policy and strategy frameworks. In turn, the Strategic Goals then serve as the highest level of ARC institutional organisation; and inform the ARC research focus, programme orientation and performance data as is reflected in the following tables:

Table 1: UNPACKING OF THE ARC STRATEGIC GOALS

ARC STRATEGIC GOAL 1	TO GENERATE KNOWLEDGE AND TECHNOLOGIES THAT WILL ENHANCE THE EFFICIENCIES IN CROP BASED AGRICULTURE			
<p>GOAL STATEMENT (Description of Goal)</p>	<p>To generate knowledge (publications) and technologies (Intellectual Property and tools) that will diversify, improve the quality and increase the value of crop based agricultural production and related processes and products; and enhance productivity towards food and nutrition security (both at national and household level) and increase commercial exports and income for the agricultural sector.</p> <p>The goal focuses on improving the productivity, competitiveness and sustainability of both commercial and smallholder crop based agriculture through research and development in three areas viz. field crops, horticultural crops and industrial crops. Crops research and development includes a wide range of grains, vegetables, indigenous ornamental plants, medicinal plants, deciduous fruit and grapes, tropical and subtropical fruits and niche crops such as herbal teas. Industrial crops research and development will focus on fibre crops such as cotton and hemp.</p>			
<p>GOAL LINKAGES (With relevant National and Sectorial Policy)</p>	<p>SUPPORTING NATIONAL OUTCOME</p> <p>Outcome 4: Decent employment through inclusive economic growth.</p> <p>Outcome 7: Vibrant, equitable, sustainable rural communities contributing towards food security for all.</p> <p>Outcome 10: Protect and enhance our environmental assets and natural resources.</p>	<p>LINK TO IGDP SECTOR GOAL</p> <p>(SG1) A transformed and equitable sector.</p> <p>(SG2) Increased production, competitiveness and profitability.</p>	<p>LINK TO BIO-ECONOMY STRATEGY OBJECTIVE</p> <p>(SO1) Improve Human Health.</p> <p>(SO2) Address food security.</p> <p>(SO3) Economic growth.</p> <p>(SO4) Quality of Life.</p>	<p>LINK TO APAP</p> <p>Sectoral Interventions:</p> <p>5.1 Poultry / Soybeans /Maize Integrated Value Chain</p> <p>5.5 Wheat Value Chain</p> <p>5.6 Horticulture</p> <p>Transversal Interventions:</p> <p>6.1 Fetsa Tlala</p> <p>6.2 Research & Innovation</p> <p>6.3 Promoting Climate Smart Agriculture (CSA)</p>
<p>ARC FOCUS AND PROGRAMME RESPONSE (Informing ARC Performance Data)</p>	<p>FOCUS OF THE GOAL</p> <ul style="list-style-type: none"> ▪ Broaden the food base for food and nutrition security and welfare. ▪ Optimised crop production systems to mitigate agricultural risks. ▪ Improved cultivars (food and non-food) through breeding, physiology and genetics. ▪ Enhanced crop protection systems. ▪ Crops and mixed production systems developed for smallholder farmers. 		<p>ALIGNED ARC PROGRAMMES</p> <p>Programme 1: Crop production, improvement and protection Programme.</p>	

ARC STRATEGIC GOAL 2	TO GENERATE KNOWLEDGE AND TECHNOLOGIES THAT WILL ENHANCE THE EFFICIENCIES IN LIVESTOCK BASED AGRICULTURE			
GOAL STATEMENT (Description of Goal)	<p>To generate knowledge (publications) and technologies (Intellectual Property and tools) that will diversify, improve the quality and increase the value of livestock based agricultural production and related processes and products; and enhance productivity towards food security (both at national and household level) and increase commercial exports and income for the agricultural sector.</p> <p>The goal focuses on improving the productivity, competitiveness and sustainability of both commercial and smallholder livestock-based agriculture through research and technology in areas related to animal health, production and improvement; as well as secondary production processes. The research and development is focussed on both production and companion animals, and increasingly in the areas of aqua-culture and wildlife.</p>			
GOAL LINKAGES (With relevant National and Sectorial Policy)	SUPPORTING NATIONAL OUTCOME Outcome 4: Decent employment through inclusive economic growth. Outcome 7: Vibrant, equitable, sustainable rural communities contributing towards food security for all. Outcome 10: Protect and enhance our environmental assets and natural resources.	LINK TO IGDP SECTOR GOAL (SG1) A transformed and equitable sector. (SG2) Increased production, competitiveness and profitability.	LINK TO BIO-ECONOMY STRATEGY OBJECTIVE (SO1) Improve Human Health. (SO2) Address food security. (SO3) Economic growth. (SO4) Quality of Life.	LINK TO APAP Sectoral Interventions: 5.1 Poultry / Soybeans /Maize Integrated Value Chain 5.2 Red Meat Value Chain 5.3 Dairy Transversal Interventions: 6.2 Research & Innovation 6.6 Bio-security
ARC FOCUS AND PROGRAMME RESPONSE (Informing ARC Performance Data)	FOCUS OF THE GOAL <ul style="list-style-type: none"> ▪ Securing and maintaining the health of herds and flocks ▪ Improving veterinary public health. ▪ Promoting the adoption of animal recording and improvement schemes by livestock farmers as a platform for economic and community development in the small holder sector. ▪ Promoting sustainable rangeland utilisation to prevent degradation and develop strategies to that end. ▪ Breeding and improving forage varieties, including grasses and legumes. ▪ Developing efficient and cost effective feeding strategies for ruminant and non-ruminant animals. ▪ Providing the South African livestock industry with appropriate and internationally recognised recording and improvement services. ▪ Providing the agricultural sector with animal development strategies. ▪ Provision of scientific services to farmers and clients of the ARC 		ALIGNED ARC PROGRAMMES Programme 2: Animal health, production and improvement Programme.	

ARC STRATEGIC GOAL 3	TO GENERATE KNOWLEDGE AND TECHNOLOGIES FOR THE CONSERVATION AND UTILISATION OF NATURAL RESOURCES			
GOAL STATEMENT (Description of Goal)	To generate knowledge (publications) and technologies (Intellectual Property and tools) that will conserve natural resources and sustain agriculture. The goal focuses on improving the productivity, competitiveness and sustainability of both commercial and smallholder based agriculture through research and technology in areas related to efficient energy utilisation, water management and irrigation practices; the rehabilitation, utilisation, development and protection of natural agricultural resources; new and improved conservation and climate smart agriculture systems; improved monitoring and characterisation systems for natural resources and genetic material; and mechanised farming and irrigation practices, techniques, equipment and machinery.			
GOAL LINKAGES (With relevant National and Sectorial Policy)	SUPPORTING NATIONAL OUTCOME	LINK TO IGDP SECTOR GOAL	LINK TO BIO-ECONOMY STRATEGY OBJECTIVE	LINK TO APAP
	Outcome 4: Decent employment through inclusive economic growth. Outcome 7: Vibrant, equitable, sustainable rural communities contributing towards food security for all. Outcome 10: Protect and enhance our environmental assets and natural resources.	(SG1) A transformed and equitable sector. (SG2) Increased production, competitiveness and profitability. (SG3) Improved sustainable natural resource management.	(SO1) Improve Human Health. (SO2) Address food security. (SO3) Economic growth. (SO4) Quality of Life.	Sectoral Interventions: 5.7 Biofuels value chain Transversal Interventions: 6.2 Research & Innovation 6.3 Promoting Climate Smart Agriculture (CSA)
ARC FOCUS AND PROGRAMME RESPONSE (Informing ARC Performance Data)	FOCUS OF THE GOAL		ALIGNED ARC PROGRAMMES	
	<ul style="list-style-type: none"> ▪ Alternative energy technologies developed. ▪ New and improved conservation agriculture systems developed. ▪ Climate smart agriculture systems enabling mitigation and adaptation to climate change. ▪ Improved Water Management and irrigation practices. ▪ Natural resources monitored and characterised. ▪ Genetic material, databases updated and maintained. ▪ Green technologies and processes to mitigate the impact of agriculture on the environment. ▪ Enhanced mechanised farming and irrigation practices, techniques, equipment and machinery. ▪ Effective environmental engineering services. 		Programme 3: Natural resources management Programme. Programme 4: Mechanisation and engineering Programme.	

ARC STRATEGIC GOAL 4				
TO GENERATE KNOWLEDGE, SOLUTIONS AND TECHNOLOGIES FOR FOOD SAFETY, QUALITY AND IMPROVED EFFICIENCIES IN THE AGRICULTURE VALUE CHAIN				
GOAL STATEMENT (Description of Goal)	To generate knowledge, solutions and technologies for food safety, quality and improved efficiencies in the agriculture value chain, with particular focus on agroprocessing, biotechnology and informatics each cross-cutting across different areas of the agricultural value chain and intended to be applied to the full value chain of crops, animals and agricultural system research.			
GOAL LINKAGES (With relevant National and Sectorial Policy)	SUPPORTING NATIONAL OUTCOME	LINK TO IGDP SECTOR GOAL	LINK TO BIO-ECONOMY STRATEGY OBJECTIVE	LINK TO APAP
	<p>Outcome 4: Decent employment through inclusive economic growth.</p> <p>Outcome 7: Vibrant, equitable, sustainable rural communities contributing towards food security for all.</p> <p>Outcome 10: Protect and enhance our environmental assets and natural resources.</p>	<p>(SG1) A transformed and equitable sector.</p> <p>(SG2) Increased production, competitiveness and profitability.</p> <p>(SG3) Improved sustainable natural resource management.</p>	<p>(SO1) Improve Human Health.</p> <p>(SO2) Address food security.</p> <p>(SO3) Economic growth.</p> <p>(SO4) Quality of Life.</p>	<p>Sectoral Interventions:</p> <p>5.1 Poultry / Soybeans /Maize Integrated Value Chain</p> <p>5.5 Wheat Value Chain</p> <p>5.6 Horticulture</p> <p>5.7 Bio-fuels</p> <p>Transversal Interventions:</p> <p>6.1 Fetsa Tlala</p> <p>6.2 Research & Innovation</p> <p>6.3 Promoting Climate Smart Agriculture (CSA)</p> <p>6.6 Bio-security</p>
ARC FOCUS AND PROGRAMME RESPONSE (Informing ARC Performance Data)	FOCUS OF THE GOAL		ALIGNED ARC PROGRAMMES	
	<ul style="list-style-type: none"> ▪ New food and non-food processes and products developed. ▪ Food science and technology developed for improved product quality and yield. ▪ Post-harvest losses reduced. ▪ New animal products developed. 		<p>Programme 5: Agro-processing, food technology and safety Programme.</p>	

ARC STRATEGIC GOAL 5					TRANSLATE RESEARCH OUTPUTS IN ORDER TO GENERATE KNOWLEDGE, FACILITATE DECISION MAKING AND CONTRIBUTE TO THE TRANSFORMATION IN THE AGRICULTURE SECTOR									
GOAL STATEMENT (Description of Goal)					<p>To provide strategies, analysis and information to develop and grow a competitive, productive and diverse agricultural sector, and provide a support service to identify and develop the commercial and food security potential of agricultural research and development, so as to ensure that these benefits accrue to all sector stakeholders.</p> <p>The goal focuses on the implementation of initiatives to address smallholder farmer constraints in terms of access to resources (technology, information, etc.), in order to enhance sustainable use of natural resources and the economic growth of the country. This includes the packaging, exploitation and licencing of ARC research and development outcomes to enhance the capacity and skills of farmers, extension personnel, processors and enterprises through facilitating the utilisation of ARC intellectual property. Lastly the goal focuses on ensuring optimal visibility of the ARC among stakeholders.</p>									
GOAL LINKAGES (With relevant National and Sectorial Policy)					SUPPORTING NATIONAL OUTCOME		LINK TO IGDP SECTOR GOAL		LINK TO BIO-ECONOMY STRATEGY OBJECTIVE		LINK TO APAP			
					<p>Outcome 4: Decent employment through inclusive economic growth.</p> <p>Outcome 7: Vibrant, equitable, sustainable rural communities contributing towards food security for all.</p>		<p>(SG1) A transformed and equitable sector.</p> <p>(SG2) Increased production, competitiveness and profitability.</p>		<p>(SO1) Improve Human Health.</p> <p>(SO2) Address food security.</p> <p>(SO3) Economic growth.</p> <p>(SO4) Quality of Life.</p>		<p>Sectoral Interventions:</p> <p>5.2 Red Meat Value Chain</p> <p>5.5 Wheat Value Chain</p> <p>5.6 Horticulture</p> <p>Transversal Interventions:</p> <p>6.1 Fetsa Tlala</p> <p>6.2 Research & Innovation</p> <p>6.3 Promoting Climate Smart Agriculture (CSA)</p>			
ARC FOCUS AND PROGRAMME RESPONSE (Informing ARC Performance Data)					FOCUS OF THE GOAL					ALIGNED ARC PROGRAMMES				
					<ul style="list-style-type: none"> ▪ ARC technology packaged and exploited. ▪ Established and functional agri-incubators. ▪ Animal, crop and mixed production systems transferred to smallholder farmers. ▪ Agricultural Development centres (ADCs) that are delivering services. ARC visibility and footprint enhanced. ▪ Smallholder Enterprise support. ▪ Agricultural skills and capacity developed and institutionalised. ▪ Agricultural Research and Development outcomes communicated/ disseminated to stakeholders. ▪ Marketing and stakeholder management. 					<p>Programme 6: Smallholder agricultural development Programme.</p> <p>Programme 7: Agricultural economics and commercialisation Programme.</p> <p>Programme 8: Training and extension Programme.</p>				

ARC STRATEGIC GOAL 6		APPLY RESOURCE MANAGEMENT PRACTICES, TOWARDS A HIGH PERFORMING AND VISIBLE ORGANISATION		
GOAL STATEMENT (Description of the Goal)	To ensure excellence in scientific research and development through enhanced capacity, capabilities and appropriate organisational technology and infrastructure.			
	The goal focuses on improving operational and organisational effectiveness and efficiency towards a sustainable ARC. It includes promoting public accountability and achieving high standards of corporate governance and efficient resource utilisation, so as to ensure optimal organisational performance, visibility and service delivery.			
GOAL LINKAGES (With relevant National and Sectorial Policy)	SUPPORTING NATIONAL OUTCOME	LINK TO IGDP SECTOR GOAL	LINK TO BIO-ECONOMY STRATEGY OBJECTIVE	LINK TO APAP
	12: Good Governance and an Efficient and Effective Public Service.	(SG 4) Governance.	<ul style="list-style-type: none"> Planning and allocation of resources (finances, human resources, equipment, etc) Effective and Efficient management of resources 	
ARC FOCUS AND PROGRAMME RESPONSE (Informing ARC Performance Data)	FOCUS OF THE GOAL		ALIGNED ARC PROGRAMMES	
	<ul style="list-style-type: none"> Funding, revenue and costs management. Assets optimisation and control. Supply chain management. Sound corporate governance. Compliance and risk, audit. Skills and capacity development. Performance management and development. Facilities, infrastructure and maintenance management. Provision and control of various tools of trade. Development, implementation and maintenance of ICT systems that are integrated and supportive to the business. HR policies, procedures and systems implemented and communicated. Strategic and business planning, including Monitoring and Evaluation. Corporate and business unit legal support and services to business units. Ensuring optimal visibility of the ARC among all stakeholders 		<p>Programme 9: Administration and corporate affairs Programme.</p>	

PART C: ARC 2016/17 AND MTEF PERFORMANCE DATA

As has been discussed, the six (6) Strategic Goals of the ARC are crafted in response to the national outcomes and the aligned sectoral policies and strategies; and in so doing, seek to give effect to the mandate and strategic intent of the ARC. The Strategic Goals are therefore pitched at an organisational level. In other words, numerous ARC Divisions, Institutes and/or Business Units will contribute to their achievement.

In turn, each of the 6 ARC Strategic Goals are unpacked into Key Outputs at corporate level, which describe the expected delivery results for each specific Strategic Goal. The focus is on ensuring that the specified outputs are clear and measurable, in accordance with the “SMART” principle. In addition, at a level below the Strategic Goals and their related Key Outputs, the ARC employs a Board approved programme structure against which the focus of the goal is described and prioritised. The programme structure reflects nine (9) budget programmes; as described in the Strategic Plan 2015/16 – 2019/20.

The following table reflects the Key Outputs and aligned budget programmes for each of the 6 ARC Strategic Goals.

9. THE ARC 2016/17 AND MTEF PERFORMANCE SCORECARD

The 2016/17 performance scorecard reflects the continuing improvement in the alignment and integration of the business of the ARC with its mandate, vision, mission and strategic drivers.

The 2016/17 performance data is then reflected for each of the 6 ARC Strategic Goals in the log frames below. They reflect the outputs, performance indicators, baselines and annual targets for each Strategic Goal. For ease of reference, the linkages to the National Outcomes, the IGDP, the Bio-Economy Strategy and the Agriculture Policy Action Plan, as well as the programme research focus are also reflected, to aid reporting to the shareholder.

Table 2: Summary of Key Outputs and Programmes per Strategic Goal

ARC STRATEGIC GOAL	ARC PROGRAMME ALIGNMENT	KEY OUTPUTS PER STRATEGIC GOAL
<p>Goal 1</p> <p>To generate knowledge and technologies that will enhance the efficiencies in crop based agriculture.</p>	<p>Programme 1: Crop production, improvement and protection Programme.</p>	<ul style="list-style-type: none"> • Generation of knowledge through research. • Development of new technologies. • Scientific services rendered. • Information Dissemination
<p>Goal 2</p> <p>To generate knowledge and technologies that will enhance the efficiencies in livestock based agriculture.</p>	<p>Programme 2: Animal health, production and improvement Programme.</p>	
<p>Goal 3</p> <p>To generate knowledge and technologies for the conservation and utilisation of natural resources.</p>	<p>Programme 3: Natural resources management Programme.</p> <p>Programme 4: Mechanisation and engineering Programme.</p>	
<p>Goal 4</p> <p>To generate knowledge, solutions and technologies for food safety, quality and improved efficiencies in the agriculture value chain</p>	<p>Programme 5: Agro-processing, food technology and safety Programme.</p>	<ul style="list-style-type: none"> • Generation of knowledge through research. • Development of new technologies. • Scientific services rendered. • Information Dissemination
<p>Goal 5</p> <p>Translate research outputs in order to generate knowledge, facilitate decision making and contribute to the transformation in the agriculture sector.</p>	<p>Programme 6: Smallholder agricultural development Programme.</p> <p>Programme 7: Agricultural economics and commercialisation Programme.</p> <p>Programme 8: Training and extension Programme.</p>	<ul style="list-style-type: none"> • Generation of knowledge through research • Technologies released to agriculture sector • Scientific services rendered • Agriculture skills and capacity development. • Agriculture R & D information communicated / disseminated to stakeholders. • Stakeholder Management
<p>Goal 6</p> <p>Apply resource management practices, towards a high performing and visible organisation</p>	<p>Programme 9: Administration and corporate affairs Programme.</p>	<ul style="list-style-type: none"> • Improved Postgraduate SET base. • Improved staff profile. • Optimal investment in training and development • Funding and Revenue generation. • Applied Information Technologies • Optimal utilization of assets.

In the sections that follow each strategic goal is further unpacked with respect to its alignment to the ARC 9 (nine) Programmes and their corresponding key research and development priorities, Outputs, Indicators, Baseline and Estimates performance and MTEF Targets for 2016/17.

STRATEGIC GOAL 1: TO GENERATE KNOWLEDGE AND TECHNOLOGIES THAT WILL ENHANCE THE EFFICIENCIES IN CROP BASED AGRICULTURE

ARC PROGRAMME ALIGNMENT	RESEARCH AND DEVELOPMENT PRIORITIES OF THE PROGRAMME
<p>Programme 1: Crop production, improvement and protection Programme.</p>	<ul style="list-style-type: none"> • Crop cultivar development through genetic improvement and modification. • Characterising and evaluating crops in terms of quality, nutritional composition, shelf life and suitability for processing. • Disease and pest control by means of enhanced genetic diversity. • Provision of strategies for management of pests, diseases and alien invaders. • Bio-control of pests and diseases. • The improvement of agricultural productivity and profitability through adaptive and innovative crop management and production systems such as conservation agriculture. • Developing crop production practices and systems, including crop rotation, intercropping, irrigation, fertigation, weed management, plant densities, and general crop practices. • Optimisation of water use and nutrition uptake. • Lowering of input costs. • Broadening the food base in order to enhance food and nutritional security. • Production systems for low input, low decision-making and marginal production areas. • Training of crop growers and extension staff to ensure sustainable production. • Provision of scientific services to farmers and clients of the ARC.

OUTPUTS, INDICATORS, BASELINE & ESTIMATED PERFORMANCE AND MTEF TARGETS

STRATEGIC GOAL 1: TO GENERATE KNOWLEDGE AND TECHNOLOGIES THAT WILL ENHANCE THE EFFICIENCIES IN CROP BASED AGRICULTURE

Programme	Focus Areas	Output	Performance Indicator	Means of Verification	Baseline 2014/15	Estimate 2015/16	MTEF Targets			Budget Estimate	Responsible Executive
							2016/17	2017/18	2018/19		
Crop production, improvement and protection	Vegetables, Grain Crops, Industrial Crops and Fruit	Knowledge Generated	Number of Scientific publications - articles in refereed journals - chapters in books - full length papers in conference proceedings - post graduate degree conferred	Copy of front page of Publication in Journal, contents page of book plus front page of chapter (should contain date of the publication). Letter from registrar office for Higher Degrees	164	94	97	87	90	R292m	Group Executive: Crop Sciences
		Technologies Developed	Number of Cultivars registered	Plant Breeders Rights registration certificates, Letter of notification for the granting of varietal listings	11	12	11	13	6		
		Scientific Services Rendered	Number of Diagnostic and Analytical services rendered	Invoices issued to clients, Job card numbers linked to services	922	664	587	589	594		
		Information Disseminated	Number of technical reports and manuals	Copy of front page of Technical / Client reports and manuals	Not Measured	679	248	220	207		
Number of field trial sites	Field trial site reports, Global Positioning System (GPS) co-ordinates for each ARC field trial site		453	348		324	302				

STRATEGIC GOAL 2: TO GENERATE KNOWLEDGE AND TECHNOLOGIES THAT WILL ENHANCE THE EFFICIENCIES IN LIVESTOCK BASED AGRICULTURE	
ARC PROGRAMME ALIGNMENT	RESEARCH AND DEVELOPMENT PRIORITIES OF THE PROGRAMME
<p>Programme 2: Animal health, production and improvement Programme.</p>	<ul style="list-style-type: none"> • Securing and maintaining the health of animals through the application of cutting edge technologies. • Conducting disease surveillance in animals and wildlife reserves to prevent introduction of disease pathogens into humans and domestic animals. • Promoting the adoption of animal recording and improvement schemes by livestock farmers as a platform for economic and community development in the smallholder sector. • Promoting sustainable rangeland utilisation to prevent degradation and develop strategies to that end. • Breeding and improving forage varieties, including grasses and legumes. • Developing efficient and cost effective feeding strategies for ruminant and non-ruminant animals. • Providing the South African livestock industry with appropriate and internationally recognised recording and improvement services. • Providing the agricultural sector with animal development strategies. • Provision of scientific services to farmers and clients of the ARC

OUTPUTS, INDICATORS, BASELINE & ESTIMATED PERFORMANCE AND MTEF TARGETS

GOAL 2: To generate knowledge and technologies that will enhance the efficiencies in livestock based agriculture

Programme	Focus Areas	Output	Performance Indicator	Means of Verification	Baseline 2014/15	Estimate 2015/16	MTEF Targets			Budget Estimate	Responsible Executive
							2016/17	2017/18	2018/19		
Animal Health, Production and Improvement	Beef, Dairy, Poultry, Pork, Lamb (mutton, chevon), Wildlife, Aquaculture, Fibre	Knowledge Generated	Number of Scientific publications - articles in refereed journals - chapters in books - full length papers in conference proceedings - post graduate degree conferred	Copy of front page of Publication in Journal, contents page of book plus front page of chapter (should contain date of the publication). Letter from registrar office for Higher Degrees	102	90	91	95	100	R234m	Group Executive: Animal Sciences
		Technologies Developed	Number of Patents registered	Patent registration certificate, Letter of notification of registration	Not Measured	0	1	0	0		
		Scientific Services Rendered	Number of Diagnostic and Analytical services rendered	Invoices, Job card numbers link to services rendered	21 746	24 650	24 705	25 461	26 255		
		Information Disseminated	Number of technical reports and manuals	Copy of front page of Technical / Client reports and manuals	Not Measured	16	13	15	17		
Number of farmers participating in each of the animal improvement schemes	Register of participating farmers per category scheme, INTERGIS		400	350		370	380				

STRATEGIC GOAL 3: TO GENERATE KNOWLEDGE AND TECHNOLOGIES FOR THE CONSERVATION AND UTILISATION OF NATURAL RESOURCES	
ARC PROGRAMME ALIGNMENT	RESEARCH AND DEVELOPMENT PRIORITIES OF THE PROGRAMME
<p>Programme 3: Natural resources management Programme.</p>	<ul style="list-style-type: none"> • Well-functioning natural assets and natural resources databases. • Efficient utilisation of natural resources for improved agricultural productivity. • Weather and climate research to increase production. • Maintenance and management of genetic material databases and national collections. • Provide expert technical advisory services to support management of climate variability and natural disasters. • Provision of prediction models for pests, diseases and alien invaders. • Develop techniques for appropriate value adding farm structures and infrastructure and related livestock facilities. • Crop water productivity and efficiency at various planning and operational levels. • Management of agricultural water and integrated management of catchments. • Bio-fuel research and especially assessment of critical success factors. • Mapping of existing and potential production areas.
<p>Programme 4: Mechanisation and Engineering Programme.</p>	<ul style="list-style-type: none"> • Developing appropriate technologies for advancement of commercial agriculture and development of small holder farmers. • Developing equipment for conservation agriculture (CA). • Developing precision systems to minimise wastage when planting, fertiliser application, spraying, harvesting and enhanced animal production systems. • Developing of systems using satellite images (GPS). • Provision of expert advice and specifications for agricultural infrastructure. • Provision of scientific services to farmers and clients of the ARC.

OUTPUTS, INDICATORS, BASELINE & ESTIMATED PERFORMANCE AND MTEF TARGETS

GOAL 3a: To generate knowledge and technologies for the conservation and utilisation of natural resources

Programme	Focus Areas	Output	Performance Indicator	Means of Verification	Baseline 2014/15	Estimate 2015/16	MTEF Targets			Budget Estimate	Responsible Executive
							2016/17	2017/18	2018/19		
Natural Resources Management	Support agriculture production in: <ul style="list-style-type: none"> • Soils; • Climate; and • Water 	Knowledge Generated	Number of Scientific publications - articles in refereed journals - chapters in books - full length papers in conference proceedings - post graduate degree conferred	Copy of front page of Publication in Journal, contents page of book plus front page of chapter (should contain date of the publication). Letter from registrar office for Higher Degrees	103	79	74	78	80	R144m	Group Executive: Research & Innovation Systems
		Technologies Developed	Number of prototypes developed	Prototype Designs	10	0	10	10	10		
		Scientific Services Rendered	Number of Analytical and Advisory services rendered	Invoices issued to clients, Job card numbers of services rendered	1 513	1 815	1 161	1 285	1 373		
		Information Disseminated	Number of technical reports and manuals	Copy of front page of Technical / Client reports and manuals	Not Measured	380	154	160	147		
			Number of field trials	Field trial site reports, Global Positioning System (GPS) co-ordinates for each ARC field trial site		316	102	97	75		

OUTPUTS, INDICATORS, BASELINE & ESTIMATED PERFORMANCE AND MTEF TARGETS

GOAL 3b: To generate knowledge and technologies for the conservation and utilisation of natural resources

Programme	Focus Areas	Output	Performance Indicator	Means of Verification	Baseline 2014/15	Estimate 2015/16	MTEF Targets			Budget Estimate	Responsible Executive
							2016/17	2017/18	2018/19		
Mechanisation and Engineering	Support agriculture production in: <ul style="list-style-type: none"> • Engineering; and • Mechanisation 	Knowledge Generated	Number of Scientific publications - articles in refereed journals - chapters in books - full length papers in conference proceedings - post graduate degree conferred	Copy of front page of Publication in Journal, contents page of book plus front page of chapter (should contain date of the publication). Letter from registrar office for Higher Degrees	2	7	8	9	10	R16m	Group Executive: Research & Innovation Systems
		Technologies Developed	Number of prototypes developed	Prototype Designs	2	4	4	5	5		
		Scientific Services Rendered	Number of Analytical and Advisory services rendered	Invoices issued to clients, Job card numbers of services rendered	17	10	11	13	15		
		Information Disseminated	Number of technical reports and manuals	Copy of front page of Technical / Client reports and manuals	Not Measured	24	26	29	34		

STRATEGIC GOAL 4: TO GENERATE KNOWLEDGE, SOLUTIONS AND TECHNOLOGIES FOR FOOD SAFETY, QUALITY AND IMPROVED EFFICIENCIES IN THE AGRICULTURE VALUE CHAIN

ARC PROGRAMME ALIGNMENT	RESEARCH AND DEVELOPMENT PRIORITIES OF THE PROGRAMME
<p>Programme 5: Agro-processing, food technology and safety Programme.</p>	<ul style="list-style-type: none"> • To develop process to create products from indigenous crops • Product yield, product quality and safety. • Product development and value adding (storage, processing and packaging). • Additional research focus areas include indigenous and high value products (indigenous herbal teas, medicinal and aromatic plants, fruits vegetables) to access niche product value chains. • Provision of scientific services to farmers and clients of the ARC. • Animal agriculture research groups conduct research primarily investigating the various factors involved in producing good quality meat, meat products and milk and milk products (safe, appealing, nutritious, affordable and tasteful). • Research into the processes involved in maximising yield without forfeiting quality and adding value to a basic product to increase quality and/or yield.

OUTPUTS, INDICATORS, BASELINE & ESTIMATED PERFORMANCE AND MTEF TARGETS

GOAL 4: To generate knowledge, solutions and technologies for food safety, quality and improved efficiencies in the agriculture value chain

Programme	Focus Areas	Output	Performance Indicator	Means of Verification	Baseline 2014/15	Estimate 2015/16	MTEF Targets			Budget Estimate	Responsible Executive
							2016/17	2017/18	2018/19		
Agro-processing, food technology and safety	Agro-Processing, Biotechnology & Informatics	Knowledge Generated	Number of Scientific publications - articles in refereed journals - chapters in books - full length papers in conference proceedings - post graduate degree conferred	Copy of front page of Publication in Journal, contents page of book plus front page of chapter (should contain date of the publication). Letter from registrar office for Higher Degrees	37	35	45	47	45	R49m	Group Executive: Research & Innovation Systems
		Scientific Services Rendered	Number of analytical and advisory services rendered	Invoices issued to clients, Job card numbers of services rendered	50	137	174	165	170		
		Information Disseminated	Number of technical reports and manuals	Copy of front page of Technical / Client reports and manuals	Not Measured	30	31	25	23		

STRATEGIC GOAL 5: TRANSLATE RESEARCH OUTPUTS IN ORDER TO GENERATE KNOWLEDGE, FACILITATE DECISION MAKING AND CONTRIBUTE TO THE TRANSFORMATION IN THE AGRICULTURE SECTOR

ARC PROGRAMME ALIGNMENT	RESEARCH AND DEVELOPMENT PRIORITIES OF THE PROGRAMME
<p>Programme 6: Smallholder agricultural development Programme.</p>	<ul style="list-style-type: none"> • Address smallholder constraints in terms of access to resources such as technology, information and training. • Increase productivity, enhance sustainable resource use and facilitate economic growth of the sector, providing appropriate farming systems solutions and technologies. • Support the ARC’s priority focus on R&D output that deals specifically with smallholder and resource-poor farmer development, significantly increasing the ARC’s support to all smallholder farmers, including land reform beneficiaries and communal farmers. • The Farming Systems Research (FSR) approach, dealing in a holistic manner with the complex constraints of smallholder and resource poor farmers, will be used extensively.
<p>Programme 7: Agricultural economics and commercialisation Programme.</p>	<ul style="list-style-type: none"> • Protection and commercialisation of IP generated by ARC’s R&D programmes, with a view to grow a competitive and diverse agricultural sector. • Support all other ARC programmes in identifying and developing the commercial potential of the ARC’s R&D output, ensuring equitable benefit distribution to all clients. • Provide customised solutions to specific farmer groups, supporting enterprise growth and development leading to food security, sustainable profitability and competitiveness. • Ensuring a correct balance between technologies issued by the ARC under license for income and technologies issued under license royalty free, aimed at benefiting resource poor and marginalised farmers, and promoting socio-economic development. • Applied agricultural economics to a range of technical and commercial challenges of different types of farmers. It deals with economic and market analysis, viability and impact assessment of enterprises, projects and investments in agricultural R&D. Policy analysis for growth of the sector is also envisaged.
<p>Programme 8: Training and extension Programme.</p>	<ul style="list-style-type: none"> • Deliver training and information to farmers and extension personnel for skills development and better decision making, and to develop enhanced dissemination platforms for use by the ARC. • Agricultural technical skills and access to current relevant technical information will contribute significantly to the productivity of the agricultural sector, especially the smallholder farmers. • Focus on capacity building, the transfer of technical skills through the provision of training courses and the development and dissemination of information resources to improve decision making and risk mitigation by farmers. • Deal with extension reforms in order to bridge the divide between R&D and Extension services.

OUTPUTS, INDICATORS, BASELINE & ESTIMATED PERFORMANCE AND MTEF TARGETS

GOAL 5: Translate research outputs in order to generate knowledge, facilitate decision making and contribute to the transformation in the agriculture sector

Programme	Focus Areas	Output	Performance Indicator	Means of Verification	Baseline 2014/15	Estimate 2015/16	MTEF Targets			Budget Estimate	Responsible Executive
							2016/17	2017/18	2018/19		
Agriculture Economics and Commercialisation & Training and Extension & Smallholder Agriculture Development	Transfer & Utilisation of R&D outputs for agriculture development, through: <ul style="list-style-type: none"> • Smallholder Agriculture, • SMME, • Commercialisation, • IP Management, • Skills & Economic Impact • Marketing 	Knowledge Generated	Number of Scientific publications - articles in refereed journals - chapters in books - full length papers in conference proceedings - post graduate degree conferred	Copy of front page of Publication in Journal, contents page of book plus front page of chapter (should contain date of the publication). Letter from registrar office for Higher Degrees	Not Measured	4	9	8	8	R193m	Group Executive: Agricultural Economics & Capacity Development
			Number of Economic Impact Study Reports	Copy of front cover and abstract of technical report (should contain date of the report)	Not Measured		3	4	4		
		Technologies released to the agriculture sector	Number of Technologies Transferred under license	Number of technologies transferred under license	33	30	30	30	30		
		Scientific Services Rendered	Number of smallholder farmers supported	Invoices, Site visit sheets/reports, Job card numbers link to services rendered	*9 991	1 506	467	588	668		
			Number of smallholder farmers participating in KyD	INTERGIS data of KyD participating farmers		7 500	8 000	8 500	9 000		
		Information Disseminated	Number of farmer field days	Front page of field day reports (containing date and venue)	Not Measured	107	48	43	37		
			Number of popular publications	Copy of front page of publication		165	181	182	178		
		Training	#Number of Farmers trained	Signed Attendance Registers	8 704	10 947	2 305	2 589	2 839		
			Number of Extension Officers trained			613	286	300	310		

* Performance indicator includes output from KyD animal improvement scheme, which has now been moved under a newly created Performance Indicator & # Incorporates farmer workshops

STRATEGIC GOAL 6: APPLY RESOURCE MANAGEMENT PRACTICES, TOWARDS A HIGH PERFORMING AND VISIBLE ORGANISATION	
ARC PROGRAMME ALIGNMENT	PRIORITIES OF THE PROGRAMME
<p>Programme 9: Administration and corporate affairs Programme.</p>	<p>Encompasses the full range of organisational management and support services and functions, including:</p> <ul style="list-style-type: none"> • Financial Management and Control, • Human Capital Development, • Training and skills development, • Supply Chain Management and Corporate Governance, • ICT, Facilities and Assets Management, • International relations, • Ensuring optimal visibility of the ARC among all stakeholders.

OUTPUTS, INDICATORS, BASELINE & ESTIMATED PERFORMANCE AND MTEF TARGETS

GOAL 6: Apply resource management practices, towards a high performing and visible organisation

Programme	Focus Areas	Output	Performance Indicator	Means of Verification	Baseline 2014/15	Estimate 2015/16	MTEF Targets			Budget Estimates	Responsible Executives
							2016/17	2017/18	2018/19		
Administration & Corporate Affairs	Human Resource Development	Improved Postgraduate SET Base	Number of students obtaining postgraduate degrees with: Masters	Certificates/Letter of confirmation of degree from Higher Education Institution	Not Measured	43	46	10	10	R170m	Group Executive: Human Resources and Legal Services
			Doctoral			16	19	12	10		
			Number of employees appointed with: Masters Degrees			10	15	15	12		
			Doctoral Degrees			7	6	5	5		
		Improved staff profile	Number of employees with: Masters degrees	Copies of proof of qualification	264	257	265	268	265		
			Doctoral degrees		221	213	228	228	236		
			Percentage staff turnover		VIP Variance report on appointments terminations and	3.50%	3.50%	3.50%	3.50%		
			Percentage increase in employment equity ratio's in the designated groupings in core business, in respect of: Black			5%	5%	5%	5%		
			Female			3%	3%	3%	3%		
			Disability			1%	1%	1%	1%		
	Optimal investment in training and development	Training spend as a % of salary bill	Invoiced rand value of training spend	1%	1.5%	1.5%	1.5%	1.5%			
	Finance	Funding and Revenue Generation	Rand Value of external income	Financial Statements (FS)	R 407 mil	R 365 mil	R 365 mil	R 410 mil	R 434 mil		
			Rand Value of royalty income		R 11 mil	R 9 mil	R 9 mil	R 10 mil	R 11 mil		
			Current Ratio	Statement of Financial Position	Not Measured	1:1	1:1	1:1	1:1		
			BEE Spend	SCM quarterly reports	R 138 mil	R 138 mil	R 140 mil	R 150 mil			
			ARC BBBEE rating	BEE rating certificate	Level 4	Level 4	Level 4	Level 4	Level 4		
	ICT and Infrastructure Management	Optimal use of Information Resources	Number of initiatives implemented towards the development of a KM Platform	Project documentation with sign-offs	Not Measured	2	3	3	3		
			Number of national assets collections digitised	Documented cases of each collection converted		2	3	3	3		
			Number of stakeholder-interactive platforms developed	Project documentation per initiative		2	3	3	3		
		Optimal utilisation of assets	Percentage increase in rental income	Lease Agreement Register, FS		5%	5%	5%	5%		
			Number of business cases developed for implementation of Asset Management Plan	Documented Business Cases		4	4	4	3		

PART D: 2016/17 BUSINESS PLAN IMPLEMENTATION CONSIDERATIONS

The ARC is acutely aware of the importance of strategy implementation in the upcoming 5-year period and has identified the following factors as important.

10. FUNDING MODEL AND APPROACH SUPPORTING THE IMPLEMENTATION OF THE BUSINESS PLAN

The ARC has achieved significant financial success over the past 5-6 years, with a steady growth in external revenue and prudent cost management. The economic conditions in the country and internationally over the past few years have resulted in the reduction of the ARC's Parliamentary Grant (PG) and External Income.

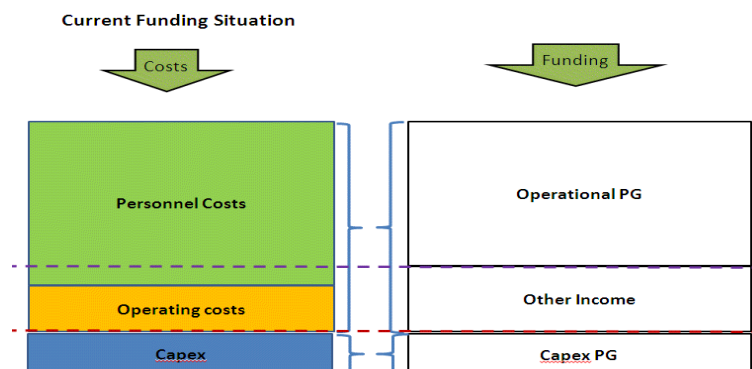
To an extent, the ARC has been able to cope with the worldwide phenomenon of a decrease in the amount and proportion of the parliamentary grant funds by attracting funding from private sources (representing 30% of total revenue) while at the same time adopting prudent financial practices. The increasing investment balance between public and private sector funding however needs to be addressed. The ARC will need to prepare itself towards generating a higher proportion of revenue from sources other than the parliamentary grant or contracts from government departments. This may require the ARC to generate more revenue through its intellectual assets, infrastructure and skills base. To achieve this, the organization will need to consider appropriate shifts in infrastructure, people and fields of research and development.

The ARC has the following pressing investment requirements:

- replacement/ new vacancies,
- new/ improved infrastructure,
- new research areas.

Against the backdrop of the current funding situation in which the parliamentary grant is unable to cover the personnel costs of the ARC (refer to figure 1 below) it is increasingly difficult to meet these investment requirements, as is reflected in the figure:

Figure 1: Current Funding Situation

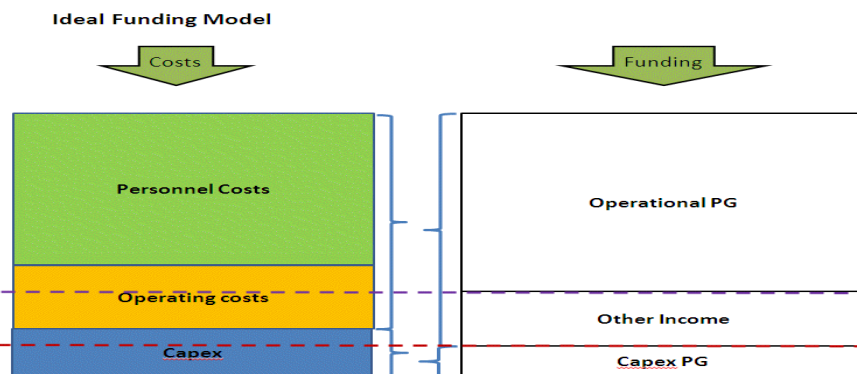


Clearly, the current funding situation is unsustainable and with costs rising faster than the annual rate of increase in the PG, the following are critical strategic focus areas:

- Aggressively grow revenue streams,
- Ongoing and strict cost management,
- Generation of revenue via the optimal utilisation and management of assets,
- Continued management of finances and related risks.

To this end, the ideal funding model is reflected in figure 2 below.

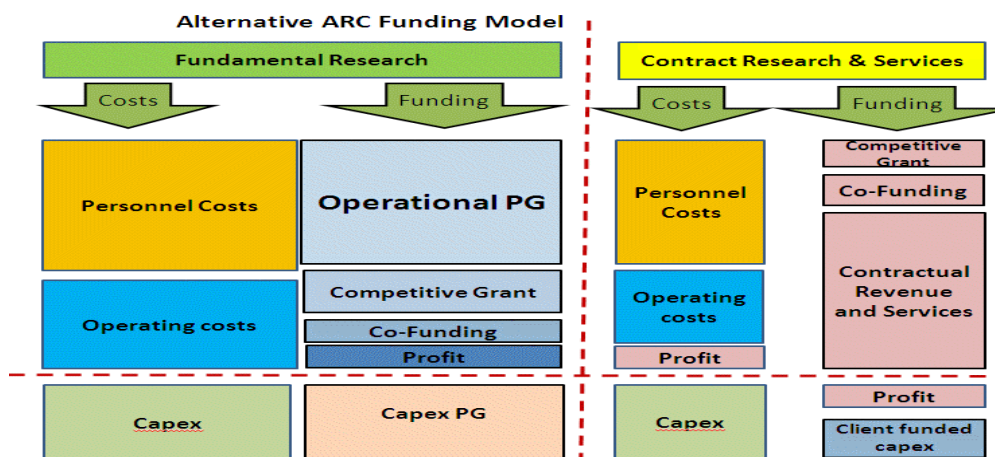
Figure 2: Ideal Funding Model



In the ideal funding model, the PG is able to cover all personnel costs, in addition to a significant proportion of other operating costs. External Revenue therefore can be directed to value-adding projects and truly aid the growth of the organisation. The organisation would then be better able to service the common good, basic, research obligations required in a developmental society whilst fulfilling the needs of paying customers requiring applied research and development.

A further enhancement on this ideal funding model is reflected in figure 3 below, an alternative funding model that seeks to divide the organisation into two main financial business streams. The first stream is funded by the parliamentary grant and its focus is on basic or fundamental research whilst the second stream is funded by external revenue with a focus on applied or contract research.

Figure 3: Alternative (Enhanced) Funding Model



In this enhanced funding model, each business stream should be self-sustaining with zero cross-subsidisation. The impact is clarity of purpose, project visibility and profitability (or not). With this model in place, the ARC will be better placed to make decisions on which projects to accept and which not to, based on profitability criterion. An adequate PG will also permit the organisation to continue performing basic research for the common good; particularly, in its quest to develop smallholder and resource-poor farmers.

With the above as context, the ARC is fully aware of the myriad priorities of government, and acknowledges that the growth of the entity is reliant more on an increase in external revenue than of the parliamentary grant. The following figure, presented by Monitor Deloitte, highlights a number of revenue generation opportunities. The ARC would do well to capitalise on these opportunities through the development and implementation of short, medium and longer term action plans.

Figure 4: ARC – External Revenue Opportunities



The above opportunities and ideas for increasing revenue can only be actively pursued through the development of the requisite capacity and competencies of the organisation.

11. STAKEHOLDER CONSIDERATIONS SUPPORTING THE IMPLEMENTATION OF THE BUSINESS PLAN

An important implementation consideration, in support of the organisation’s growth strategy, is an understanding of the needs, expectations and related projects of the various stakeholders impacting on the business of the ARC. This stakeholder analysis, particularly, warrants consideration of business units focussed on grants projects and new business development. It is therefore important for the ARC to place its stakeholders at the very apex of its strategic thinking and resultant planning. Stakeholder priorities towards effectively managing stakeholder relations and collaborative partnerships are then a critical consideration in this business plan.

The following table reflects key stakeholder considerations and programmes considered in the planning discussions:

Table 3: Key Stakeholder Considerations

KEY STAKEHOLDER GROUP	KEY PROJECTS / PROGRAMMES / ACTIONS REQUIRED TO MEET THE EXPECTATIONS OF THE STAKEHOLDER
INTERNAL STAKEHOLDER GROUPINGS	
Shareholder/ Portfolio Committee / DAFF	<ul style="list-style-type: none"> • Execute the political mandate • Sound governance and unqualified audit opinion • Well aligned priorities and plans, with specific and clear line of sight to the DAFF Strategy, APAP, NDP, Medium Term Strategic Framework (2014-19), and Bio-Economy Strategy • Optimal leveraging of ARC assets to fund the developmental agenda • Structured and regular liaison • Participation in DAFF strategic planning sessions • Economic Impact reporting on R&D activities
Board/ Council	<ul style="list-style-type: none"> • Execute the Council mandate • Sound and defensible Performance Targets and Reporting • Sound Corporate Governance • Enhanced collaborations in R&D • Council members should act as ARC Ambassadors
Employees	<ul style="list-style-type: none"> • Improved communication • Streamline various administration processes • Rollout a change management programme • Develop and maintain a succession, retention and capacity development plan • Refine the strategic planning process to include important role players and to ultimately ensure sufficient focus and funding of research • Review and refine the ARC student model • High-level recruitment of senior research specialists • Implementation of career path and staff development processes • Provision of good employee wellness programmes • Providing a conducive working environment • Drive delivery on key ARC Programmes

EXTERNAL STAKEHOLDER GROUPINGS

R&D Partners, Academia, HEIs	<ul style="list-style-type: none"> • Enhance accuracy of current data and products • Current partnering MOUs and programmes to be enhanced • Enhance pre-and-post Graduate Programmes (e.g. Bursaries programme enhanced) • More proactive efforts towards collaboration • Collaborative research with other SADC countries (along lines of same interest) • Pursue new areas of scientific focus, including aquaculture, biotechnology and wildlife • Provide access to new technologies for both public and private sector • Joint appointments of ARC staff by academic institutions
National Government Departments and Agencies	<ul style="list-style-type: none"> • Better communication of relevance of ARC capabilities • Provision of information to support decision making and to support policy development • Support the Mechanisms for Implementation of the APAP and Bio-Economy Strategies: <ul style="list-style-type: none"> ➢ Coordinating Committees ➢ Agro-innovation hubs for Technology Transfer ➢ Investment in animal vaccine capabilities ➢ Build tertiary level capabilities ➢ Centres of Competence for health priorities ➢ Undertake leadership of identified programmes
Beneficiaries / Communities	<ul style="list-style-type: none"> • Job creation and improved livelihoods • Community consultation and engagement • Food and nutrition security • Small business development, training and nurturing • Improved technologies, enhanced efficiencies & productivity, improved competitiveness • Improved access to products and services • Improved engagement and regular communication
Funding agencies - local and international	<ul style="list-style-type: none"> • Improved contract negotiation, management and reporting • Broaden focus on collaboration and joint-effort in R&D • Enhanced international relations • Increased participation in international collaborations and research consortia • Determining and showing actual Return on Investment (ROI)
End-user customers	<ul style="list-style-type: none"> • New products, services and applications (technology) • Relevance and innovation in ARC delivery • A balanced approach to meeting the needs of all farmers • Improved turn-around times
Suppliers/ Service Providers	<ul style="list-style-type: none"> • Fair, open and transparent SCM processes • Consistency in application of standards • Information dissemination • Timeous payment for work done • Improved engagement processes
Media groupings	<ul style="list-style-type: none"> • Honest and open communication channels • Keep media up-to-date on developments on key initiatives • Availability and accessibility of spokespeople • Timeous submission of information

12. SUMMARY OF CRITICAL SUCCESS FACTORS FOR 2016/17

Considering the prevailing and emerging performance environment of the ARC, the following key considerations require management intervention during the financial year 2016/17. Success in the implementation of the critical success factors depends upon the availability of the necessary resources at the most appropriate time (people, finances, infrastructure, equipment etc). In some instances, the ARC will rely on the willingness of potential partners for effective collaboration. Some of the critical success factors will require planning and implementation over a period longer than a particular financial year. Accordingly, the ARC has identified the following critical success factors for consideration in financial year 2016/17:

- a) Implementation of recommendations emanating from the ARC External Institutional Review;
- b) Review of current funding model and development of a new sustainable funding model in consultation with key stakeholders. Special focus will be on developing strategies towards resource mobilization, including collaborative projects;
- c) Successful recruitment of highly qualified, enthusiastic and energized people into the ARC;
- d) Development of a revised ARC ICT strategic plan; and,
- e) Optimal utilization of resources (finances, equipment, infrastructure).

13. KEY STRATEGIC RISK EXPOSURES INFORMING THE DEVELOPMENT OF THE 2016/17 BUSINESS PLAN

Informed by these key considerations and aligned to the revised strategic goals of the ARC, the following top 10 strategic risks have been developed, assessed and ranked. Internal controls and actions to mitigate these risks will be formulated by management, with the intention of improving the organisations chances of meeting its commitments in the 2016/17 reporting period.

Table 4: Top 10 Strategic Risk Exposures

RANKING	STRATEGIC RISK EXPOSURES
1	Loss of credibility as a result of a unstandardized quality management system for ARC laboratories providing services
2	Insufficient funding to fully meet the ARC mandate, which incorporates aspects of: *lack of cash reserves *ARC debtors above 150 days *declining PG allocation (impact on human resources, in-sourcing and research outputs) *external income (e.g. co-ordinated revenue generated approach)
3	Project delays resulting from the upgrade of the Transboundary Animal Diseases facility with respect to the production of the Foot and Mouth Disease (FMD) vaccine
4	Negative impact of adverse climatic conditions on ARC R&D output
5	Loss of institutional memory and intellectual assets due to the lack of knowledge management processes and practices.
6	A reduction in the ARC R&D capabilities as a result of ageing infrastructure across the ARC, which has been exacerbated by increasing maintenance costs and inadequate maintenance funding.
7	Increased impact of irregular electricity supply as well as negative impacts of load shedding on ARC R&D performance, e.g. glasshouses, cold rooms and hydroponic systems, laboratories, equipment break downs, etc.
8	Long turn-around times in respect of ARC business processes that are caused by delays in: *SCM process (e.g. payment of invoices, turn-around times, ERP system improvements i.r.o goods received, supplier registration portal) *Conclusion of contracts *IP management process *Recruitment process
9	Sub-optimal utilisation of ARC properties/ facilities/assets in respect of: *occupied and / or unoccupied properties * underutilisation of properties, e.g. total land area used vs. available capacity * non-utilisation of properties, e.g. unused farms / land * general surplus capacity of other assets for inter-institute use, e.g. farming equipment
10	Limited visibility of the ARC Brand, in respect of its achievements, services and agricultural sector impacts

These risks and the implementation of the required mitigation actions, will be reviewed on a quarterly basis, and reported to the ARC Audit and Risk Committee and Council.

PART E: 2016/17 BUDGET AND MTEF ESTIMATES

The next section sets out the ARC's medium term funding strategy over the MTEF period. It addresses the financial pressures which the organisation faces and makes the case for increased public funding.

14. FUNDING ALLOCATIONS TO STRATEGIC PROGRAMMES

Table 5: Funding Allocations

AGRICULTURAL RESEARCH COUNCIL					
BUDGET OVERVIEW FOR THE MTEF PERIOD					
		Allocation	Medium-term expenditure estimate		
			2016/17	2017/18	2018/19
			R'000	R'000	R'000
Core Strategic Mandate	PROGRAMMES				
	1. Crop Production, Improvement and Protection	24.1%	292 911	324 281	342 181
	2. Animal Health, Production and Improvement	20.8%	234 127	288 767	304 858
	3. Natural Resources Management	12.1%	144 942	163 316	175 118
	4. Mechanization and Engineering	1.4%	16 366	18 790	19 880
	5. Agro-processing, food technology & safety	4.2%	49 197	56 482	59 899
	6. Small-holder Agricultural Development	10.7%	125 351	145 123	155 372
	7. Agricultural Economics & Commercialization	3.9%	45 882	52 676	55 849
	8. Training & Extension	2.0%	23 990	27 543	29 047
	9. Administration and Corporate Affairs (Head Office & Institutes)	14.0%	170 232	190 535	199 025
		Total Operational Funding		1 103 000	1 267 513
	Capital Expenditure	6.9%	86 988	91 338	95 906
	TOTAL	100%	1 189 988	1 358 851	1 437 135

15. MTEF EXPENDITURE ESTIMATE

Table 6: MTEF Expenditure Estimate

BUDGET OVERVIEW FOR THE MTEF PERIOD					
		Contribution	Medium-term Expenditure Estimate		
			2016/17	2017/18	2018/19
		%	R'000	R'000	R'000
BASELINE FUNDING	Baseline Allocation-Operational	50.5%	567 571	702 041	743 984
	Baseline Allocation- Economic Support and Competitive Packages	0.0%	-	-	-
	Baseline Allocation-Capital	6.9%	86 988	91 338	95 906
	Total Baseline Allocation		654 559	793 379	839 890
PROVISION OF NATIONAL SERVICES	Climate Monitoring	0.1%	1 808	1 898	1 992
	SADC activities (ring-fenced)	0.3%	3 879	4 073	4 277
	INTERGIS	0.2%	2 579	2 708	2 843
	Crop forecasting	0.9%	11 947	12 544	13 170
	Diagnostic Services (OVI)	1.7%	21 312	22 378	23 497
	Total other grant allocations		41 526	43 601	45 780
MAINTENANCE OF NATIONAL ASSETS	Gene banks, National Collections, Inventories, Databanks, Surveys and Information Systems- DST	3.1%	39 474	41 447	43 520
	National public goods assets- DAFF	1.3%	17 064	17 917	18 813
	Total Funding for National Assets		56 538	59 364	62 332
TOTAL GRANTS	Total Grants Excluding VAT		752 622	896 344	948 002
	Total VAT on Total Grants		105 367	125 488	132 720
	Total Grants Including VAT		857 989	1 021 832	1 080 722
BASELINE FUNDING	Total Grants (Excluding VAT)	65.2%	752 622	896 344	948 002
ARC	External Income (Contract Income) (Ex-VAT)	32.7%	409 871	434 464	460 531
ARC	Other Income	2.1%	27 494	28 043	28 604
	Total ARC Funding (Excluding VAT)	100%	1 189 988	1 358 851	1 437 136

AGRICULTURAL RESEARCH COUNCIL

BUDGET OVERVIEW FOR THE MTEF PERIOD

CONSOLIDATED INCOME AND EXPENDITURE ESTIMATE

		Medium-term Expenditure Estimate		
		2016/17	2017/18	2018/19
		R'000	R'000	R'000
Economic Classification	Current			
	Compensation of Employees	818 265	859 178	902 137
	Goods and Services	247 735	369 335	397 984
	Use of Infrastructure (Depreciation)	37 000	39 000	41 108
	Animal Improvement Scheme			
	Payment of Capital Assets			
	Acquisition	86 988	91 338	95 906
TOTAL		1 189 988	1 358 851	1 437 135
Standard Items of Expenditure	Current			
	Compensation of Employees-Core Research	695 525	730 302	766 817
	Compensation of Employees-Administrative Support	122 740	128 877	135 321
	Goods and Services	247 735	369 335	397 984
	Use of Infrastructure (Depreciation)	37 000	39 000	41 108
	Capital Assets	86 988	91 338	95 906
TOTAL		1 189 988	1 358 851	1 437 135

16. TEN YEAR FINANCIAL REVIEW

Table 7: Ten Year Financial Review

AGRICULTURAL RESEARCH COUNCIL-TEN YEAR REVIEW												
STATEMENT OF FINANCIAL PERFORMANCE												
									MTEF			
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	R'm	R'm	R'm	R'm	R'm	R'm	R'm	R'm	R'm	R'm	R'm	R'm
STATEMENT OF FINANCIAL PERFORMANCE												
Total Income	730	734	831	870	978	1 104	1 363	1 358	1 158	1 190	1 359	1 437
Parliamentary Grant	452	470	533	590	666	747	866	919	745	753	896	948
Baseline - Operational	408	410	476	484	511	677	791	840	662	666	805	852
Baseline - Capital	43	60	57	106	155	71	75	79	83	87	91	96
External Income	266	256	293	266	294	318	466	407	387	410	434	461
Investment Income	12	9	6	14	18	39	31	32	27	27	28	29
Other Income	0	27	0	0	-	-	-	-	-	-	-	-
Total Expenditure	718	778	773	811	854	1 015	1 206	1 324	1 076	1 103	1 268	1 341
Personnel Costs	416	467	490	511	518	612	685	760	779	818	859	902
Operating Expenditure	289	296	265	282	312	380	491	517	261	248	369	398
Depreciation	13	14	18	19	22	24	30	48	35	37	39	41
Impairment of fixed property	-	-	-	-	1	0	-	-	-	-	-	-
Net Surplus\ (Deficit)	12	(16)	58	59	124	89	156	34	83	87	91	96

									MTEF			
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	R'm	R'm	R'm	R'm	R'm	R'm	R'm	R'm	R'm	R'm	R'm	R'm
STATEMENT OF FINANCIAL POSITION												
Property, plant and equipment	608	649	649	666	729	784	899	942	992	1 104	1 156	1 120
Investments	2	2	2	2	2	4	4	5	4	4	4	4
Current assets (excluding cash)	95	82	93	76	84	88	141	126	113	119	132	120
Cash resources (net of bank overdraft)	59	35	73	163	457	497	480	508	317	286	361	372
Total Assets	764	768	818	908	1 273	1 372	1 525	1 582	1 426	1 513	1 653	1 707
Capital and Reserves	273	502	559	618	742	832	988	1 001	1 001	1 088	1 179	1 275
Non-Current Liabilities	326	87	71	72	115	193	209	213	193	193	193	193
Current Liabilities	164	180	188	217	416	348	327	368	233	232	281	239
Total Equity and Liabilities	764	768	818	908	1 273	1 372	1 525	1 582	1 426	1 513	1 653	1 707
CASH FLOWS												
Net cash flow from operating activities	5	36	56	129	384	150	129	139	(50)	56	166	107
Net cash flow from investing activities	(42)	(60)	(17)	(39)	(91)	(110)	(145)	(112)	(141)	(87)	(91)	(96)
Cash and cash equivalents at beginning of year	97	59	35	73	163	457	497	480	508	317	286	361
Cash and cash equivalents at end of year	59	35	73	163	457	497	480	508	317	286	361	372

	MTEF											
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
RATIO ANALYSIS												
Profitability and asset management												
Asset Turnover	1.2	1.2	1.3	1.2	1.1	1.0	1.1	1.1	0.9	0.9	1.0	1.0
Return on net assets (%)	2.0%	(2.7%)	9.3%	8.6%	14.5%	8.6%	13.1%	2.8%	6.9%	6.8%	6.7%	6.5%
Current Ratio	0.6	0.5	0.5	0.4	0.2	0.3	0.4	1.7	1.8	1.7	1.8	2.1
Operating margin (%)	1.7%	(2.2%)	7.1%	6.9%	12.9%	8.3%	11.7%	2.6%	7.3%	7.5%	6.9%	6.8%
Performance												
Personnel Costs as a % of PG	92%	99%	92%	87%	78%	82%	79%	83%	105%	109%	96%	95%
Personnel Costs as a % of PG (Excl. Capex)	102%	114%	103%	106%	101%	90%	87%	90%	118%	123%	107%	106%
Personnel Costs as a percentage of total expenditure %	58%	60%	63%	63%	61%	60%	57%	57%	72%	74%	68%	67%
External revenue as a % of total income	36%	35%	35%	31%	30%	29%	34%	30%	33%	34%	32%	32%

PART F: LINKS TO OTHER PLANS

17. MATERIALITY AND SIGNIFICANCE FRAMEWORK

For the purposes of materiality defined in sections 50(1), 55(2) and 66(1) of the Public Finance Management Act; the Agricultural Research Council has developed and agreed upon a framework of acceptable levels of materiality and significance with the relevant executive Authority.

Table 8: ARC Materiality and Significance Framework

PFMA SECTION	QUANTITATIVE (AMOUNT)	QUANTITATIVE (NATURE)
Section 50 Fiduciary duties of accounting authorities		
(1) The accounting authority for a public entity must –(c) on request, disclose to the executive authority responsible for that public entity or other legislature to which the public entity is accountable, all material facts, including those reasonably discoverable, which in any way may influence the decisions or actions of the executive authority or that legislature.	Any fact discovered of which the amount exceeds the materiality figure (R7.9 mil) used in the preparation of the Annual Financial Statements.	<ol style="list-style-type: none"> 1. Any item or event of which specific disclosure is required by legislation/law, King Report II or GRAP. 2. Any fact discovered of which its omission or misstatement, in the Council's opinion, could influence the decisions or actions of the executive authority or legislature.
Section 55 Annual Report and financial statements		
(2) The annual report and financial Statements referred to in subsection(1)(d) must- <ol style="list-style-type: none"> a) fairly present the state of affairs of the public entity, its business, its financial results, its performance against predetermined objectives and its financial position as the end of the financial year concerned; b) include particulars of 	-	-

PFMA SECTION	QUANTITATIVE (AMOUNT)	QUANTITATIVE (NATURE)
<p>i. any material losses through criminal conduct and any irregular expenditure and fruitless and wasteful expenditure that occurred during the financial year.</p>	<p>1. Losses through criminal conduct—any loss identified.</p> <p>2. Losses through any expenditure-if the combined total exceeds the materiality figure used in the preparation of the Annual Financial Statements.</p> <p>3. Any irregular, fruitless and wasteful expenditure, defined by the PFMA, will be reported.</p>	<p>Any identified loss through criminal, reckless or negligent conduct.</p>
<p>ii. any criminal or disciplinary steps taken as consequence of such losses or irregular expenditure or fruitless and wasteful expenditure;</p> <p>iii. any losses recovered or written off;</p> <p>iv. any financial assistance received from the state and commitments made by the state on its behalf; and</p> <p>v. any other matters that may be prescribed.</p>	<p>-</p>	<p>-</p>
<p>Section 66 (1) Restrictions on borrowing, guarantees and other commitments.</p>	<p>Any amount</p>	<p>This public entity may not borrow money, nor issue a guarantee, indemnity or security, nor enter into any other transaction that binds or may bind the institution to any future financial commitment unless acting through the relevant executive authority. (PFMA section66(3)(c).</p>
<p>Section 54 Information to be submitted by accounting authorities</p>		
<p>(2) Before a public entity concludes any of the following transactions, the accounting authority for the public entity must promptly and in writing inform the relevant treasury of the transaction and submit relevant particulars of the transaction to its executive authority for approval of the transaction:</p>	<p>Not applicable</p>	<p>-</p>
<p>(b) participation in a significant partnership, trust, unincorporated joint venture or similar arrangement;</p>	<p>Not applicable</p>	<p>Any participation, outside of the approved strategic plan and budget.</p>

(c) acquisition or disposal of a significant shareholding in a company;	Acquisition: More than R5 mil	Any acquisition or disposal, outside of the approved strategic plan and budget
(d) acquisition or disposal of a significant asset;	Disposal: Movable Assets the combined value of which exceeds R5 mil.	<ol style="list-style-type: none"> 1) Any asset that would increase or decrease the overall operation functions of the Council, outside of the approved strategic plan and budget. 2) Disposal of the major part of the assets of the Council.
e) commencement or cessation of a significant business activity.	Not applicable	Any business activity that would increase or decrease the overall operational functions of the Council, outside of the approved strategic plan and budget.

PART G: ANNEXURES

The annexure describes / unpacks the performance indicators for each of the 6 ARC strategic goals.

1. PERFORMANCE INDICATOR DESCRIPTORS

STRATEGIC GOAL 1: TO GENERATE KNOWLEDGE AND TECHNOLOGIES THAT WILL ENHANCE THE EFFICIENCIES IN CROP BASED AGRICULTURE

Indicator Title	Number of Scientific Publications
Short Definition	ARC research and development (R&D) outputs, i.e. scientific publications, that are contained in refereed journals, chapters in books, conference proceedings, theses
Purpose / Importance	To indicate the number of scientific publications, resulting from the R & D activities, of the ARC
Source/Collection of Data	All research published in reference to articles in refereed journals, chapters in books, conference proceedings and theses.
Method of calculation	Simple count of scientific publications appearing in the defined sources
Data Limitations	Turn-around time for approvals, publication and receiving copy of article
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Crop Sciences

Indicator Title	Number of Cultivars Registered
Short Definition	Makes reference to the number of plant cultivars registered by the DAFF Registrar, as per the Plant Breeders Rights Act and variety listings
Purpose / Importance	To indicate the number of plant cultivars that has resulted from the Crop Sciences R&D activities of the ARC, which has successfully been registered by the Registrar under the Plant Breeders Rights Act.
Source/Collection of Data	Number of Plant Breeder's Right certificates and or notifications of granting of varietal listings issued to the ARC
Method of calculation	Simple count of the Plant Breeders Right certificates and or notifications in respect of varietal listings received from the Registrar
Data Limitations	Turn-around time for approvals by the Registrar as well as the inability of Crop Sciences Division to keep (filing) and provide valid and accurate performance information at time of reporting and auditing
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Crop Sciences

Indicator Title	Number of Diagnostic and Analytical Services rendered
Short Definition	The amount of agriculture crop related, laboratory based, diagnostic and analytical services (scientific services) rendered by the ARC Crop Sciences Division
Purpose / Importance	To indicate the number of agriculture crop related scientific services (laboratory based), both diagnostic and analytical services, performed by the ARC Crop Sciences Division
Source/Collection of Data	All invoices and or job card numbers issued in respect of scientific services, i.e. diagnostic and analytical services, rendered
Method of calculation	Simple count of all invoices and or job card numbers correlating to all (diagnostic & analytical) scientific services rendered
Data Limitations	The provision of more than one service per invoice
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Crop Sciences

Indicator Title	Number of Technical Reports and Manuals
Short Definition	Key to the outputs of the ARC R&D activities, are the development of various technical / client reports and manuals. These technical / client reports and manuals offers a broad agriculture commodity application, intended for distribution and use by farmers, extensions officers, commodity groups/organisations and other interested parties.
Purpose / Importance	To indicate the number of technical / client reports and manuals developed, for distribution and use by farmers, extensions officers, commodity groups / organisations and other interested parties
Source/Collection of Data	Front cover of Technical / Client Reports and Manuals
Method of calculation	Simple count of the technical / client reports and manuals developed
Data Limitations	Inability of Crop Sciences Division to keep (filing) and provide valid performance information at time of reporting and auditing
Type of Indicator	Output
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Crop Sciences

Indicator Title	Number of field trial sites
Short Definition	The Crop Sciences Division undertakes various R&D field trials, in order to, amongst others, determine the yield potential under certain farming environments / conditions, on various farms across South Africa.
Purpose / Importance	To indicate the number of field trials per site, in order to present the extend of the ARC Crop Sciences Division R&D activities, in respect of field trials, across South Africa's agriculture landscape
Source/Collection of Data	All Global Positioning System (GPS) coordinates for each of the Crop Sciences Division field trials sites
Method of calculation	Simple count of all GPS sites, reflecting the exact location of all crop related field trial sites
Data Limitations	Inability of Crop Sciences Division to keep (filing) and provide valid performance information at time of reporting and auditing
Type of Indicator	Distribution
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Crop Sciences

STRATEGIC GOAL 2: TO GENERATE KNOWLEDGE AND TECHNOLOGIES THAT WILL ENHANCE THE EFFICIENCIES IN LIVESTOCK BASED AGRICULTURE

Indicator Title	Number of Scientific Publications
Short Definition	ARC research and development (R&D) outputs, i.e. scientific publications, that are contained in refereed journals, chapters in books, conference proceedings, theses
Purpose / Importance	To indicate the number of scientific publications, resulting from the R & D activities, of the ARC
Source/Collection of Data	All research published in reference to articles in refereed journals, chapters in books, conference proceedings and theses
Method of calculation	Simple count of scientific publications appearing in the defined sources
Data Limitations	Turn-around time for approvals, publication and receiving copy of article
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Animal Sciences

Indicator Title	Number of Patents Registered
Short Definition	Makes reference to the number of patents registered
Purpose / Importance	To indicate the number of patents registered that has resulted from the Animal Sciences R&D activities of the ARC, which has successfully been registered
Source/Collection of Data	Number of patent registration certificates and or notification of registration issued to the ARC
Method of calculation	Simple count of all the Patent Registration Certificates and or notifications issued
Data Limitations	Turn-around time for approvals of patent certification applications, as well as the inability of the Animal Sciences Division to keep (filing) and provide valid and accurate performance information at time of reporting and auditing
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Animal Sciences

Indicator Title	Number of Diagnostic and Analytical Services rendered
Short Definition	The amount of animal science related, laboratory based, diagnostic and analytical services (scientific services) rendered by the ARC Animal Sciences Division
Purpose / Importance	To indicate the number of animal science scientific services (laboratory based), both diagnostic and analytical services, performed by the ARC Animal Sciences Division
Source/Collection of Data	All invoices and or job card numbers issued in respect of scientific services, i.e. diagnostic and analytical services, rendered
Method of calculation	Simple count of all invoices and job card numbers correlating to all (diagnostic & analytical) scientific services rendered
Data Limitations	Inability of the Animal Sciences Division to keep (filing) and provide valid performance information at time of reporting and auditing
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Animal Sciences

Indicator Title	Number of Technical Reports and Manuals
Short Definition	Key to the outputs of the ARC R&D activities, are the development of various technical / client reports and manuals. These technical / client reports and manuals offers a broad agriculture commodity application, intended for distribution and use by farmers, extensions officers, commodity groups/organisations and other interested parties.
Purpose / Importance	To indicate the number of technical / client reports and manuals developed, for distribution and use by farmers, extensions officers, commodity groups / organisations and other interested parties
Source/Collection of Data	Front cover of Technical / Client Reports and Manuals
Method of calculation	Simple count of the technical / client reports and manuals developed
Data Limitations	Inability of Animal Sciences Division to keep (filing) and provide valid performance information at time of reporting and auditing
Type of Indicator	Output
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Animal Sciences

Indicator Title	Number of farmers participating in animal improvement schemes
Short Definition	The ARC is the custodian of the National Animal Recording and Improvement Scheme (NARIS), which aims to provide the livestock industry with professional and internationally recognised recording and genetic improvement services.
Purpose / Importance	To indicate the overall number of farmers that are currently participating in the animal improvements schemes
Source/Collection of Data	All farmers participating in NARIS, as captured in INTERGIS
Method of calculation	Simple count of all livestock farmers, participating in National Animal Improvement Scheme (Dairy, Beef and Smallstock, e.g. Phase A, B, C , etc.) as captured in INTERGIS
Data Limitations	Inability of the Animal Sciences Division to keep (filing) and provide valid performance information at time of reporting and auditing
Type of Indicator	Quantity
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Animal Sciences

STRATEGIC GOAL 3: TO GENERATE KNOWLEDGE AND TECHNOLOGIES FOR THE CONSERVATION AND UTILISATION OF NATURAL RESOURCES

Indicator Title	Number of Scientific Publications
Short Definition	ARC research and development (R&D) outputs, i.e. scientific publications, that are contained in refereed journals, chapters in books, conference proceedings, theses
Purpose / Importance	To indicate the number of scientific publications, resulting from the R & D activities, of the ARC
Source/Collection of Data	All research published in reference to articles in refereed journals, chapters in books, conference proceedings and theses
Method of calculation	Simple count of scientific publications appearing in the defined sources
Data Limitations	Turn-around time for approvals, publication and receiving copy of article
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Research and Innovation Systems

Indicator Title	Number of prototypes developed
Short Definition	Makes reference to the development of new technologies in the form of prototypes being developed
Purpose / Importance	To indicate the number of prototypes that has been developed from the RIS R&D activities of the ARC
Source/Collection of Data	Number of prototype designs developed
Method of calculation	Simple count of the number of prototype designs developed
Data Limitations	The inability of RIS Division to keep (filing) and provide valid and accurate performance information at time of reporting and auditing
Type of Indicator	Output
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Research and Innovation Systems

Indicator Title	Number of Diagnostic and Analytical Services rendered
Short Definition	The amount of agriculture production support, i.e. laboratory based, diagnostic and analytical services (scientific services) rendered by the ARC RIS Division
Purpose / Importance	To indicate the number of agriculture production support related scientific services (laboratory based), both diagnostic and analytical services, performed by the ARC RIS Division
Source/Collection of Data	All invoices and or job card numbers issued in respect of scientific services, i.e. diagnostic and analytical services, rendered
Method of calculation	Simple count of all invoices and or job card numbers correlating to all (diagnostic & analytical) scientific services rendered
Data Limitations	Inability of the RIS Division to keep (filing) and provide valid performance information at time of reporting and auditing
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Research and Innovation Systems

Indicator Title	Number of Technical Reports and Manuals
Short Definition	Key to the outputs of the ARC R&D activities, are the development of various technical/client reports and manuals. These technical /client reports and manuals offers broad agriculture production support, intended for distribution and use by farmers, extensions officers, commodity groups/organisations and other interested parties.
Purpose / Importance	To indicate the number of technical /client reports and manuals developed, for distribution and use by farmers, extensions officers, commodity groups / organisations and other interested parties
Source/Collection of Data	Front cover of Technical / Client Reports and Manuals
Method of calculation	Simple count of the technical / client reports and manuals developed
Data Limitations	Inability of the RIS Division to keep (filing) and provide valid performance information at time of reporting and auditing
Type of Indicator	Output
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Research and Innovation Systems

Indicator Title	Number of field trial sites
Short Definition	The RIS Division undertakes various R&D field trials, in order to support agriculture production for optimal conservation and utilisation of natural resources.
Purpose / Importance	To indicate the number of field trial sites, in order to present the extend of the ARC RIS Division R&D activities, in respect of field trials, across South Africa's agriculture landscape
Source/Collection of Data	All Global Positioning System (GPS) coordinates for each of the RIS Division field trials sites
Method of calculation	Simple count of all GPS sites, reflecting the exact location of all RIS field trial sites
Data Limitations	Inability of the RIS Division to keep (filing) and provide valid performance information at time of reporting and auditing
Type of Indicator	Distribution
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Research and Innovation Systems

STRATEGIC GOAL 4: TO GENERATE KNOWLEDGE, SOLUTIONS AND TECHNOLOGIES FOR FOOD SAFETY, QUALITY AND IMPROVED EFFICIENCIES IN THE AGRICULTURE VALUE CHAIN.

Indicator Title	Number of Scientific Publications
Short Definition	ARC research and development (R&D) outputs, i.e. scientific publications, that are contained in refereed journals, chapters in books, conference proceedings, theses
Purpose / Importance	To indicate the number of scientific publications, resulting from the R & D activities, of the ARC
Source/Collection of Data	All research published in reference to articles in refereed journals, chapters in books, conference proceedings and theses
Method of calculation	Simple count of scientific publications appearing in the defined sources
Data Limitations	Turn-around time for approvals, publication and receiving copy of article
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Research and Innovation Systems

Indicator Title	Number of Analytical and Advisory Services rendered
Short Definition	The amount of scientific services, i.e. analytical and advisory services, rendered
Purpose / Importance	To indicate the number of scientific services rendered with respect to, both analytical and advisory services
Source/Collection of Data	All invoices / job card numbers / client reports / site visit sheets or reports issued in respect of scientific services, i.e. analytical and advisory, rendered to clients / farmers
Method of calculation	Simple count of all invoices / job card numbers / client reports / site visit sheets or reports, correlating to all (analytical & advisory) scientific services rendered
Data Limitations	Inability of the RIS Division to keep (filing) and provide valid performance information at time of reporting and auditing
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Research and Innovation Systems

Indicator Title	Number of Technical Reports and Manuals
Short Definition	Key to the outputs of the ARC R&D activities, are the development of various technical / client reports and manuals. These technical / client reports and manuals offers broad guidelines on food safety, quality and improving efficiencies in the agriculture value chain
Purpose / Importance	To indicate the number of technical / client reports and manuals developed, for distribution and use by farmers, extensions officers, commodity groups / organisations and other interested parties
Source/Collection of Data	Front page of Technical / Client Reports and Manuals
Method of calculation	Simple count of the technical / client reports and manuals developed
Data Limitations	Inability of the RIS Division to keep (filing) and provide valid performance information at time of reporting and auditing
Type of Indicator	Output
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Research and Innovation Systems

STRATEGIC GOAL 5: TRANSLATE RESEARCH OUTPUTS IN ORDER TO GENERATE KNOWLEDGE, FACILITATE DECISION MAKING AND CONTRIBUTE TO THE TRANSFORMATION IN THE AGRICULTURE SECTOR.

Indicator Title	Number of Scientific Publications
Short Definition	ARC research and development (R&D) outputs, i.e. scientific publications, that are contained in refereed journals, chapters in books, full length conference proceedings and theses
Purpose / Importance	To indicate the number of scientific publications, that resulted from R&D
Source/Collection of Data	All research published in reference to articles in refereed journals, chapters in books, full length conference proceedings and theses
Method of calculation	Simple count of scientific publications appearing in the defined sources
Data Limitations	Turn-around time for approvals, publication and receiving copy of article
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Agricultural Economics and Capacity Development

Indicator Title	Number of Economic impact Study Reports
Short Definition	Written output of completed ARC Economic Impact studies that are in a report format
Purpose / Importance	To indicate the number of Economic Impact Studies, that resulted from ARC Economic Impact Studies
Source/Collection of Data	All Economic Impact Study Reports compiled, in reference to completed ARC Economic Impact Assessments
Method of calculation	Simple count of completed ARC Economic Impact Study reports
Data Limitations	Availability of data from ARC Programmes
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Agricultural Economics and Capacity Development

Indicator Title	Number of Technologies transferred under license
Short Definition	Makes reference to the number of ARC developed technologies that have been transferred under license agreements
Purpose / Importance	To indicate the number of ARC developed technologies that have been transferred to third parties, under a license agreement
Source/Collection of Data	Number of technologies transferred under license
Method of calculation	Simple count of the number of technologies transferred under license agreements, entered into with third parties
Data Limitations	Turn-around time for approvals by various role players involved in the license agreement.
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Agricultural Economics and Capacity Development

Indicator Title	Number of smallholder farmers supported
Short Definition	The number of smallholder farmers supported through the rendering of scientific services
Purpose / Importance	To indicate the number of smallholder farmers supported, in respect of, scientific services being rendered.
Source/Collection of Data	All invoices issued / site visit sheets or reports / job card numbers linked to services rendered at National & Provincial level smallholder farmer projects
Method of calculation	Simple count of all invoices issued / no of farmers engaged, as contained on site visit sheets or reports / job numbers linked to services rendered at National & Provincial level smallholder farmer projects
Data Limitations	Availability of source data from various ARC Campuses, as specified above
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Agricultural Economics and Capacity Development

Indicator Title	Number of smallholder farmers participating in Kaonafatso ya Dikgomo (KyD)
Short Definition	The ARC is the custodian of the KyD animal improvement scheme, which aims to develop rural communities by accelerating the participation of smallholder livestock farmers into mainstream industries
Purpose / Importance	To indicate the overall number of smallholder farmers that are currently participating in the KyD animal improvement scheme
Source/Collection of Data	All smallholder farmers participating in the KyD scheme, as captured in INTERGIS
Method of calculation	Simple count of smallholder farmers, participating in KyD scheme, as captured in INTERGIS
Data Limitations	Availability of source data from Animal Sciences Division, as outlined above
Type of Indicator	Quantity
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Agricultural Economics and Capacity Development

Indicator Title	Number of farmer field days
Short Definition	The number of farmer field days held or involving the ARC
Purpose / Importance	To indicate the number of farmer field days held or involving the ARC
Source/Collection of Data	Signed attendance registers & a copy of programme of the event
Method of calculation	Simple count of the number of farmer field days held
Data Limitations	Availability of source data from various ARC Campuses, as specified above
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Agricultural Economics and Capacity Development

Indicator Title	Number of popular publications
Short Definition	Number of popular publications developed, i.e. articles in Farmers Weekly, etc.
Purpose / Importance	To indicate the number of popular publications developed by the ARC
Source/Collection of Data	Front cover of popular publication, with date of publication
Method of calculation	Simple count of the number of popular publications developed
Data Limitations	Availability of source data from various ARC Campuses, as specified above
Type of Indicator	Output
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Agricultural Economics and Capacity Development

Indicator Title	Number of Farmers trained
Short Definition	Farmers who have been trained or attended training / workshops offered by the ARC
Purpose / Importance	To indicate the number of farmers who have been trained or attended training / workshops, currently offered by the ARC
Source/Collection of Data	Signed attendance registers
Method of calculation	Simple count of the number of farmers trained / or who attend a workshop, as captured on attendance registers
Data Limitations	Availability of source data from various ARC Campuses, as specified above
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Agricultural Economics and Capacity Development

Indicator Title	Number of Extension Officers trained
Short Definition	Extension Officers who have been trained / attended training offered by ARC
Purpose / Importance	To indicate the number of Extension Officers who have been trained or attended training currently offered by the ARC
Source/Collection of Data	Signed attendance registers
Method of calculation	Simple count of the number of extension officers trained, as captured on attendance registers
Data Limitations	Availability of source data from various ARC Campuses, as specified above
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Agricultural Economics and Capacity Development

STRATEGIC GOAL 6: APPLY RESOURCE MANAGEMENT PRACTICES, TOWARDS A HIGH PERFORMING AND VISIBLE ORGANISATION

HUMAN RESOURCE DEVELOPMENT

Indicator Title	Number of students obtaining postgraduate degrees with: Masters
Short Definition	Total number of supported students graduating with Masters degree
Purpose / Importance	To indicate progress of students supported
Source/Collection of Data	Certificates/Letter of confirmation of degree from HEI
Method of calculation	Simple count of number of students eligible to graduate and/or who have completed Masters degree studies
Data Limitations	Inability for HEI to confirm the graduation in time
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Human Resources and Legal Services

Indicator Title	Number of students obtaining postgraduate degrees with: Doctoral
Short Definition	Total number of supported students graduating with Doctoral degree
Purpose / Importance	To indicate progress of students supported
Source/Collection of Data	Certificates/Letter of confirmation of degree from HEI
Method of calculation	Simple count of number of students eligible to graduate and/or who have completed doctoral degree studies
Data Limitations	Inability for HEI and students to confirm and/or communicate the graduation in time
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Human Resources and Legal Services

Indicator Title	Number of employees appointed with: Masters Degrees
Short Definition	Total number of new employees appointed with Masters degrees
Purpose / Importance	To indicate new staff employed with Masters Degrees
Source/Collection of Data	Copies of proof of qualification
Method of calculation	Simple count of number of new employees who have completed Masters degree studies
Data Limitations	Inability for HEI and new employees to confirm and/or produce the certificate / letter of confirmation of degree from HEI
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Human Resources and Legal Services

Indicator Title	Number of employees appointed with: Doctoral Degrees
Short Definition	Total number of new employees appointed with Doctoral degrees
Purpose / Importance	To indicate new staff employed with Doctoral Degrees
Source/Collection of Data	Copies of proof of qualification
Method of calculation	Simple count of number of new employees who have completed Doctoral degree studies
Data Limitations	Inability for HEI and new employees to confirm and/or produce the certificate / letter of confirmation of degree from HEI
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Human Resources and Legal Services

Indicator Title	Number of employees with: Masters Degrees
Short Definition	Total number of SET employees with masters degrees
Purpose / Importance	To evaluate the quality of SET employees
Source/Collection of Data	Copies of proof of qualification
Method of calculation	Simple number of employees with masters certificates and/or qualification as the highest qualification
Data Limitations	Unavailability of copies of certificates on employees HR files
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Human Resources and Legal Services

Indicator Title	Number of employees appointed with: Doctoral Degrees
Short Definition	Total number of SET employees with doctoral degrees
Purpose / Importance	To assess the quality of SET employees
Source/Collection of Data	Copies of proof of qualification
Method of calculation	Simple number of employees with doctoral certificates and/or qualification as the highest qualification
Data Limitations	Unavailability of copies of certificates on employees HR files
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Human Resources and Legal Services

Indicator Title	Percentage staff turnover
Short Definition	Total number of employees who were terminated
Purpose / Importance	To determine the movement of staff as a component of HR planning
Source/Collection of Data	VIP Variance report on appointments and terminations
Method of calculation	Number of terminations divided by the number of total staff, as a percentage
Data Limitations	Terminations that are captured late or inaccurate
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Human Resources and Legal Services

Indicator Title	Percentage increase in employment equity ratio's in the designated groupings, in core business, in respect of: Black
Short Definition	An increase in percentage of employees in designated groupings of the core business
Purpose / Importance	To administer and manager effects of employment equity
Source/Collection of Data	VIP variance report on appointments and terminations
Method of calculation	Percentage of designated groupings as a proportion of total staff
Data Limitations	Incorrect groupings
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Human Resources and Legal Services

Indicator Title	Percentage increase in employment equity ratio's in the designated groupings, in core business, in respect of: Female
Short Definition	An increase in percentage of female employees as a proportion of total staff in core business
Purpose / Importance	To administer and manager effects of employment equity
Source/Collection of Data	VIP variance report on appointments and terminations
Method of calculation	Percentage of female employees as a proportion of total staff in core business
Data Limitations	Incorrect groupings
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Human Resources and Legal Services

Indicator Title	Percentage increase in employment equity ratios in the designated groupings, in respect of: Disability (non-incremental)
Short Definition	A percentage of employees living with disabilities in the organisation
Purpose / Importance	To administer and manager effects of employment equity
Source/Collection of Data	VIP variance report on appointments
Method of calculation	Percentage of employees living with disabilities as a proportion of total staff
Data Limitations	Incorrect groupings
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Human Resources and Legal Services

Indicator Title	Training spent as a % of Salary Bill
Short Definition	The total percentage of amount spent on training as a percentage of total salary bill
Purpose / Importance	To measure the return on training investment
Source/Collection of Data	Invoiced rand value of training spent
Method of calculation	The amount of money spent on training divided by salary bill as a percentage
Data Limitations	Incorrect calculation
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: Human Resources and Legal Services

FINANCE

Indicator Title	Rand Value of external income
Short Definition	Contract revenue from both government and non-government entities and sale of products and services.
Purpose / Importance	Source of funding
Source/Collection of Data	Financial Statements
Method of calculation	As per income statement
Data Limitations	-
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Chief Financial Officer

Indicator Title	Rand Value of royalty income
Short Definition	Royalty income as per licence agreements with external parties
Purpose / Importance	It indicates the level of usage of our research output
Source/Collection of Data	Financial Statements
Method of calculation	Based on the contract/financial statements
Data Limitations	-
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Chief Financial Officer

Indicator Title	Current ratio
Short Definition	Ability of the current assets to cover the current liabilities (Liquidity)
Purpose / Importance	Indicates the ability of the ARC to meet its short term financial obligations
Source/Collection of Data	Statement of Financial Position
Method of calculation	Current assets divided by current liabilities
Data Limitations	-
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Chief Financial Officer

Indicator Title	BEE spend
Short Definition	The level of expenditure on businesses which are BEE compliant in terms of the BBBEE Act
Purpose / Importance	Indicates our compliance to Treasury regulations
Source/Collection of Data	Supply Chain Quarterly Reports
Method of calculation	As prescribed by the BBBEE Act
Data Limitations	-
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Chief Financial Officer

Indicator Title	ARC BBBEE RATING
Short Definition	This is the BEE rating as prescribed by the BBBEE ACT
Purpose / Importance	Indicates our compliance to Treasury regulations
Source/Collection of Data	BEE rating Certificate
Method of calculation	ARC BBBEE rating certificate, calculated as per the appropriate Act
Data Limitations	-
Type of Indicator	Performance
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	No
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Chief Financial Officer

ICT AND INFRASTRUCTURE MANAGEMENT

Indicator Title	Number of initiatives implemented towards the development of a KM platform
Short Definition	Project initiatives to build the Knowledge Management platform, e.g. Consolidation of R&D databases, Scanning and imaging of documents and other information artefacts
Purpose / Importance	To measure the progressive development of a Knowledge Management platform
Source/Collection of Data	Project documentation with sign-offs
Method of calculation	Simple count of initiatives implemented
Data Limitations	Inability to keep accurate project documentation
Type of Indicator	Performance
Calculation Type	Quantitative
Reporting Cycle	Annual
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: ICT & Infrastructure Management

Indicator Title	Number of National Asset collections digitised
Short Definition	Number of National Asset collections (gene banks, soil maps, production area maps, etc) converted/replicated into digital/electronic representations
Purpose / Importance	To improve accessibility via electronic platforms and improve record keeping
Source/Collection of Data	Documented cases of each collection converted
Method of calculation	Simple count of individual asset instances converted and accessible
Data Limitations	Inability to keep accurate documentation for each initiative
Type of Indicator	Quantitative
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: ICT & Infrastructure Management

Indicator Title	Number of Stakeholder interactive platforms implemented
Short Definition	The number of ICT interfaces developed and implemented to as platforms to interact with information services and resources. e.g. mobile applications
Purpose / Importance	To enable and improve ease of interaction by employees and other stakeholders with information services, information resources and information dissemination
Source/Collection of Data	Project documentation per initiative
Method of calculation	Simple count of initiatives implemented
Data Limitations	Inability to keep accurate records/documentation
Type of Indicator	Quantitative
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: ICT & Infrastructure Management

Indicator Title	Percentage increase in rental income
Short Definition	The proportion of increase in property (land & buildings) rental income generated
Purpose / Importance	To measure improvements in utilisation assets (spare capacity) through attracting rental opportunities
Source/Collection of Data	ARC-wide Lease Agreement Register
Method of calculation	Proportion of increase in rental income against a baseline figure, as a percentage
Data Limitations	Completeness of lease records; Timeliness of approvals of leases
Type of Indicator	Quantitative
Calculation Type	Cumulative
Reporting Cycle	Annual
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: ICT & Infrastructure Management

Indicator Title	Number of business cases developed to implement the Asset Management Plan
Short Definition	The number of individual business cases developed to enable implementation of the Asset Management Plan (to optimise asset utilisation, reduce costs, etc.)
Purpose / Importance	To track the implementation progress of initiatives required to implement the Asset Management Plan
Source/Collection of Data	Documented Business Cases
Method of calculation	Simple count of Business Cases developed
Data Limitations	None
Type of Indicator	Quantitative
Calculation Type	Cumulative
Reporting Cycle	Quarterly
New Indicator	Yes
Desired Performance	Meeting targets set for the 2016/17 FY
Indicator Responsibility	Group Executive: ICT & Infrastructure Management



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