

South Africa Yearbook 2015/16

# Agriculture



The mandate of the Department of Agriculture, Forestry and Fisheries (DAFF) includes value chains, inputs, production and consumption in the agriculture, forestry and fishery sectors.

The department's strategic goals over the medium term, which are organised around the key priority areas of food security, job creation, and rural and economic development, are to:

- provide effective and efficient strategic leadership, governance and administration in the department
- increase production and productivity in the agriculture, forestry and fisheries sectors, to enhance employment and economic growth
- provide an enabling environment for food security and sector transformation
- ensure the sustainable use of natural resources in the forestry and fisheries sectors through the conservation, protection, rehabilitation and recovery of natural resources within ecosystems.

The agriculture, forestry and fisheries sectors are crucial to South Africa's socio-economic development. However, the future of these sectors depends on critical issues such as climate change, population growth, skills shortages, changes in consumer needs and shifts in the global economy and related markets.

## Improving food security

The DAFF promotes food security by supporting food producers through the:

- **Micro Agricultural Financial Institutions** of South Africa, which provides agricultural production loans to smallholder operators in the agriculture, forestry and fishery sectors;
- **Comprehensive Agricultural Support Programme (CASP)** grant, which provides post-settlement support to targeted beneficiaries of land reform and redistribution, as well as to other producers who have acquired land privately and are engaged in domestic value-adding enterprises or exporting agricultural produce; and
- **Ilima/Letsema** projects grant, which provides production inputs to subsistence and smallholder farmers

## Creating jobs

The Agricultural Policy Action Plan (APAP), approved by Cabinet in March 2015, will promote the revitalisation of agriculture and agro-processing value chains in priority commodities such as maize, soyabeans, poultry and red meat.

These commodities have been identified in the National Development Plan (NDP) as having

high growth potential and high labour absorption capacity, hence contributing to creating 1 million jobs by 2030.

The LandCare Programme aims to promote sustainable land and soil management practices, prevent land degradation and desertification in rural areas and contribute to job creation. The programme is projected to create 2 400 full time equivalent jobs in rehabilitating 48 900 hectares (ha) of land over the medium term, and 4 725 jobs in planting 5 175 ha to refurbish industrial plantations and community woodlots.

The total LandCare grant allocation is R220.7 million over the medium term. Planned work also includes reducing the spread of invasive alien plants, fencing and protecting agricultural land against degradation, conserving water resources, and combating the loss of topsoil.

The Expanded Public Works Programme's (EPWP) Working for Fisheries Programme (WfFP) encourages communities to responsibly manage and conserve aquatic environments through, for example, cleaning fishing harbours and conducting harbour patrols. The department transfers R242 million for these projects to the Marine Living Resources Fund.

Some 1 695 full time equivalent jobs are expected to be created in the fishery sector over the medium term.

The EPWP was introduced as a nationwide government-led initiative aimed at drawing a significant number of unemployed South Africans into productive work in a manner that will enable them to gain skills and increase their capacity to earn an income.

This programme advances the principle of government expenditure, across all three spheres, to provide employment opportunities and skills development to the unemployed.

## Legislation and frameworks

Some of the legislation of the DAFF include:

- The Veterinary and Para-Veterinary Act, 1962 (Act 71 of 1962) provides for the establishment, powers and functions of the South African Veterinary Council; the registration of people practising veterinary and para-veterinary professions and control of the practising of veterinary and para-veterinary professions, and was amended in 2012.
- The Fertiliser and Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act 36 of 1947) regulates the registration of fertilisers, stock feeds, agricultural remedies, stock remedies, sterilising plants and pest control operators, and provides for control over the acquisition, disposal, sale and use

- of fertilisers, farm feeds, agricultural remedies and stock remedies.
- Consultation regarding the Plant Breeders' Rights Amendment Bill was underway to replace the Plant Breeders' Rights Act, 1976 (Act 15 of 1976). The Bill aims to strengthen the protection of intellectual property rights relevant to new plant varieties, which in turn positively impacts on the competitiveness of South Africa's agricultural sector.
  - The Genetically Modified Organisms (GMO) Act, 1997 (Act 15 of 1997) provides for the regulation of GMO activities in South Africa, and states that biosafety assessments should be conducted for every proposed GMO activity. The Act provides a framework to ensure that all activities involving the use of GMOs are carried out in such a way as to limit possible harmful consequences.
  - The Disaster Management Act, 2002 (Act 57 of 2002) and the National Disaster Risk-Management Framework of 2005 address agricultural risk management and climate change, and are supplemented by climate change-related policies and programmes.
  - The Meat Safety Act, 2000 (Act 40 of 2000) provides for measures to promote meat safety and the safety of animal products; establish and maintain essential national standards in respect of abattoirs; regulate the import and export of meat and establish meat safety schemes.
  - The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) provides for control over the use of natural agricultural resources to promote the conservation of soil, water sources and vegetation, and the combating of weeds and invader plants.
  - The Control of Markets in Rural Areas Ordinance, 1965 (Ordinance 38 of 1965).
  - The Problem Animals Control Ordinance, 1978 (Ordinance 14 of 1978).
  - The Livestock Brands Act, 1962 (Act 87 of 1962) regulates the registration of a brand in the name of an owner of livestock for the purpose of identifying the livestock.
  - The Agricultural Credit Act, 1966 (Act 28 of 1966) provides for a system of assistance to people or undertaking to farming operations, and for control in respect of assistance rendered.
  - The Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970) regulates the subdivision of agricultural land and its use for purposes other than agriculture. Investigations are conducted by the provincial department in support of the execution of the Act.
  - The Plant Improvement Act, 1976 (Act 53 of 1976) provides for the registration of establishments where plants and propagation material are sold and packed, for the introduction of schemes for the certification of certain propagation material, for the requirements to which plants and propagation material sold for the purposes of cultivation must conform and for quality control over plants and propagation material imported or exported.
  - The Livestock Improvement Act, 1977 (Act 25 of 1977) regulates the collection and sale of semen and ova and the artificial insemination and in-ovulation of certain animals, the establishment of a system for the evaluation and certification of the performance of certain animals quality control regarding the importation and exportation of certain animals, semen, ova and eggs the incorporation of livestock breeders' societies and the maintenance of the legal personality of livestock breeders' societies and the granting of certain exclusive powers relating to the registration of pedigrees of certain livestock.
  - The Cooperatives Act, 1981 (Act 91 of 1981) regulates the formation, registration, management and functioning of various types of co-operative and the winding up and dissolution of cooperatives.
  - The Perishable Products Export Control Act, 1983 (Act 9 of 1983) provides for the control of perishable products intended for export from South Africa and for the continued existence of a statutory board to bring about the orderly and efficient export of perishable products from the country.
  - The Agricultural Pests Act, 1983 (Act 36 of 1983) introduces measures for the prevention and combating of agricultural pests.
  - The Agricultural Research Act, 1990 (Act 86 of 1990) establishes a juristic person, the Agricultural Research Council (ARC), to undertake agricultural research and regulate matters regarding the ARC's proceedings, powers, duties, management, control, employees, financing and related matters.
  - The Agricultural Product Standards Act, 1990 (Act 119 of 1990) provides for control over the sale and export of certain agricultural products and other related products, with a view to the maintenance of certain standards regarding the quality of products and packing, marking and labelling.
  - The Agricultural Produce Agents Act, 1992 (Act 12 of 1992) provides for the establishment of an Agricultural Produce Agents Council and

fidelity funds.

- The Onderstepoort Biological Products (OBP) Incorporation Act, 1999 (Act 19 of 1999) provides for the establishment of a company to manage the institution, the appointment of directors and the holding and disposal of shares in the company.
- The Marine Living Resources Act, 1998 (Act 18 of 1998) provides for the conservation of the marine ecosystem, the long-term sustainable use of marine living resources and the orderly access to exploitation, use and protection of certain marine living resources; and for the exercising of control over marine living resources in a fair and equitable manner for the benefit of all the citizens of South Africa.
- The National Forest Act, 1998 (Act 84 of 1998) allows for an exemption for the use and handling of protected trees and their products; and authorises the Minister to establish a trust, in respect of state forests under certain circumstances.
- The National Veld and Forest Fire Act, 1998 (Act 101 of 1998) reforms the law on veld and forest fires and repeals certain provisions of the Forest Act, 1984 (Act 122 of 1984).
- The Sea Fishery Act, 1988 (Act 12 of 1988) provides for the conservation of the marine ecosystem and the orderly exploitation, use and protection of certain marine resources; and provides for the exercise of control over sea fisheries.

The African Growth and Opportunity Act (AGOA) is a United States of America (USA) Trade Act, enacted on 18 May 2000 as Public Law 106 of the 200th Congress. AGOA has since been renewed to 2025. It provides duty-free access to the USA market for almost all products exported from more than 40 eligible sub-Saharan African countries, including South Africa.

## Budget and funding

The DAFF's total budget for 2015/16 was R6,383 billion, of which R3,7 billion was ring-fenced for transfers of conditional grants and parliamentary grants:

In terms of conditional grants:

- R1,642 billion has been allocated to the CASP
- R491,4 million to Ilima/Letsema
- R69,3 million to the LandCare Programme.

In terms of Parliamentary Grants

- R241,8 million has been allocated to the Marine Living Resources Fund
- R813 million to the ARC
- R35 million to the National Agricultural Marketing Council (NAMC)
- R5,935 million to Ncera farm.

In addition to that R788,1 million of the budget has been allocated to Administration. This division of the budget reflects the alignment of the budget to strategic priorities.

A total of 15 prefabricated clinics worth R7,5 million were scheduled to be delivered to provinces in 2015/16.

The DAFF set aside R51 million to procure additional mobile clinics and purchasing of medical equipment and pharmaceuticals. These veterinary services were intended to be delivered to the red meat and poultry hubs which were being developed through APAP.

In terms of targets for the conditional grants for 2015/16:

- R678 million will be directed to the Fetsa Tlala programme, which will bring 128 000 ha of land under production
- 511 projects from both conditional grants will be supported, reaching about 27 000 smallholder farmers
- 160 000 vulnerable households will be assisted to produce their own food through household food gardens – the Rekgaba ka Diratswana programme in the Free State being one example of government efforts to assist vulnerable communities to produce their own food
- approximately 31 000 decent jobs will be created in 2015/16 from these interventions.

## Agricultural Policy Action Plan

The challenges facing the agricultural, forestry and fisheries (AFF) sectors are numerous: Rising input costs, an uneven international trade environment, lack of developmental infrastructure (rail, harbour, electricity) and a rapidly evolving policy and production environment. At the same time, transformation of the AFF sectors has been slow and tentative.

Based on this analysis of the various challenges within the AFF sectors the Agriculture, Forestry and Fisheries Strategic Framework was developed to outline appropriate responses to these challenges. The APAP aims to translate these high-level responses offered in the AFF Strategic Framework into tangible, concrete steps.

The AFF Strategic Framework identifies four broad sector goals (Equitable growth and competitiveness; Equity and transformation; Environmental sustainability and Governance), which translate into a comprehensive, abiding intervention framework, which will be supported through iterations of APAP via short and medium-term interventions targeting specific value chains (sectoral interventions)

or transversal challenges (transversal interventions).

The APAP, which was approved by Cabinet in March 2015, is the programmatic response to Priority One of the Nine-Point Plan to ignite growth and create jobs. It outlines a value chain approach in priority commodities, informed by the commodities with high-growth potential and high-labour absorption capacity identified in the NDP.

The APAP has been reviewed to ensure that it becomes a jobs driver and promotes growth, employment, rural incomes, investment, output, exports and African regional development.

## Agriculture and South Africa's role in the national and international economy

Agriculture is a catalyst for economic growth and the current contribution of the sector towards the gross domestic product (GDP) of about 2,5% is far below the capacity of the sector. The sector contributes another 12% to the GDP through value added from related manufacturing and processing.

The share of agriculture, forestry and fisheries products of the total South African trade is approximately 12% and South Africa remains in a positive trade balance.

The value of exports increased from R134,9 billion in 2014 to R144,4 billion in 2015. In the same period, South Africa's exports into other African countries increased from R59 billion to R62 billion and into Asia from R34,5 billion to R37,1 billion.

The conclusion of the European Union (EU) Economic Partnership Agreement has provided increased quota access for a number of existing and new products such as wine and sugar.

The DAFF will continue to focus on increasing intra-African trade and other global trade opportunities.

The largest subsector in the agricultural, forestry and fisheries export basket in 2015, based on value, was fruit and nuts. The highest growth in the export of specific products within the sectors was paper and paper products, with an increase of 94%.

While South Africa continues to be a net exporter of agricultural, forestry and fisheries products, exports are still concentrated in primary agricultural products and the country is a net importer of processed agricultural products.

Regarding AGOA trade, South Africa was given an extension on the 31 December 2015 deadline to comply to AGOA requirements. An agreement was reached on 6 January 2016 on

the relevant three meats, namely beef, pork and poultry.

The Proclamation made by the USA not to suspend agricultural imports, was extended to 15 March 2016. The agreement was eventually signed by the USA and is currently in force. The DAFF has already issued permits for the first 16 250 t of poultry meat to 29 importers, of which nine are historically disadvantaged individuals (HDIs).

Under AGOA, the agricultural sector has advantages for the exports of citrus, macadamia nuts, wine and other food products. However, implications of the concessions are that the EU and other partners may require equal treatment, which will require readjustment of the current agreements with trading partners.

Concerning sanitary and phyto-sanitary (SPS) issues, a protocol for highly pathogenic avian influenza was signed between the two countries in November 2015.

The DAFF has continued to open new markets. A notable achievement is the Indonesian government's recognition of the competence of South Africa's food safety control measures. This comes after a protracted negotiation process between the technical teams of the two countries, which eventually led to the opening of the Indonesian market to South African exporters.

The recognition was granted in respect of 15 commodities, including deciduous fruit, citrus, grapes and nuts. South African exporters will be allowed to use the port of Jakarta, the port of Tanjung Priok, which is closer to the main Jakarta market, therefore reducing transport costs and preventing quality loss.

In February 2014, the World Organisation for Animal Health (OIE) declared South Africa free of foot-and-mouth disease (FMD) after a three-year ban on the export of red meat as a result of the disease. In February 2015, the country's FMD-free zone status was reconfirmed by the OIE.

However, in late 2015 there was an outbreak of SAT-3 FMD in Limpopo. The outbreak was detected in the protection zone in Limpopo, where vaccination is carried out. The outbreak was contained in the province. Four affected dip tanks were detected in December 2015 and one in January 2016, all located in the Thulamela Local Municipality, which falls within the FMD protection zone (with vaccination).

The outbreak did not affect South Africa's FMD-free status as the protection zone is not part of the free zone.

By mid-2016, South Africa was also free from highly pathogenic avian influenza and is able

to export ostrich meat to the EU. To strengthen animal healthcare, 18 primary healthcare clinics were delivered to provinces and the Veterinary Strategy, as part of the Animal Disease Management Plan, was finalised.

In safeguarding biodiversity, the ARC has developed a new vaccine against heartwater that will be made available to farmers after evaluation for safety and registration by the authorities.

The availability of a Heartwater vaccine will boost mohair production as Angora goats are the most susceptible to animal diseases. Development of the new vaccine will play a vital role in expanding the number of successful livestock farmers, resulting in reduced losses and increased revenue for farmers.

Regarding exotic fruit flies, the quarantine pest *Bactrocera dorsalis* was detected in all provinces except the Western, Eastern and Northern Cape and the Free State. No surveillance took place in North West. However, pest management interventions took place in KwaZulu-Natal and the Eastern Cape. The pest was also detected in new areas – eastern parts of the Eastern Cape and the Mpumalanga Highveld.

South Africa, under the leadership of DAFF, has acceded to the Indian Ocean Tuna Commission and the Commission for the Conservation of Southern Bluefin Tuna, thereby allowing the country greater influence in negotiating for increased tuna quota allocations and access.

The associated benefits of fully acceding to these regional fisheries management organisations (RFMOs) has resulted in the immediate increase in the allocation of Southern Bluefin Tuna from 40 to 150 t. This has increased the sector's income from about R24 million to more than R100 million.

## Farm income

Gross farming income from all agricultural products for the year ended 31 December 2015 was estimated at R226 727 million, which was 4,1% higher than the previous year.

The gross farming income from field crops decreased by 9,9% and amounted to R51 091 million because of the decrease in income from grain sorghum by 58,9%, groundnuts by 28,6%, dry beans by 20,8%, sunflower seed by 17,9%, maize by 13,9%, soya beans by 4,7% and wheat slightly by 0,3%. The income derived from tobacco increased by 21,0%.

Prices received by farmers for agricultural products increased on average by 6,0%, while prices paid by farmers for farming requisites rose by 3,5%, resulting in the strengthening of

the terms of trade from 1,01 to 1,04 during the period under review.

The weighted average price of field crops increased by 9,8% as a result of the increase in prices of hay by 13,2%, summer grains by 12,5%, tobacco by 10,6%, sugar cane by 10,1%, winter grains by 6,7%, cotton by 5,3% and oilseeds by 0,6%. The price of dry beans decreased by 12,7%.

Prices of horticultural products increased by 2,1%, mainly because of the increase in prices of fruit by 8,4%. The prices of vegetables and viticulture decreased by 6,1% and 2,6% respectively.

Prices of animal products increased by 6,0% as a result of the increase in prices of pastoral products by 12,9%, poultry meat by 7,7% and slaughtered stock by 6,4%. The price of milk decreased by 1,8%.

The prices paid for farming requisites rose by 3,5%, compared to 6,2% in the previous year. Prices paid for tractors and building material increased by 8,4% each, trucks by 5,7%, fencing material by 5,2%, maintenance and repairs by 4,8%, seeds and feeds by 4,3% each, animal health and crop protection by 4,0%, packing material by 3,8% and fertilisers by 2,3%. Net farming income decreased by 3,1% and amounted to R73 414 million for the 12 months up to 31 December 2015.

## Role players Credit and assistance

The six major sources of credit for farmers are banks (56%), agricultural cooperatives and agribusinesses (9%), the Land and Agricultural Development Bank of South Africa (the Land Bank) (30%), private creditors (3%) and other creditors and financial institutions (2%).

## Land and Agricultural Development Bank of South Africa

The Land Bank is a specialist agricultural bank guided by a government mandate to provide financial services to the commercial farming sector and agribusiness. It also makes available financial products to new entrants to agriculture from historically disadvantaged backgrounds.

The Land Bank contributed R40,9 billion on the GDP, which resulted in more than 23 975 job opportunities and more than 313 404 maintained jobs. As the drought continued in the 2015/16 production season, the Land Bank was already in negotiations with the Industrial Development Corporation (IDC) for a concessionary loan scheme to assist distressed farmers in the declared disaster areas.

A drought relief concessionary loan scheme was launched by the Land Bank in March 2016 priced at prime less 3 %. This facility was meant to reduce the interest burden to ease the cash flow during the recovery years.

The Land Bank also participated in several drought forums led by stakeholders in agriculture to propose solutions to the DAFF.

### Micro Agricultural Financial Institutions of South Africa

MAFISA is a scheme that provides production loans to smallholder operators within the agriculture, forestry and fisheries sectors.

MAFISA loans were initially restricted to agricultural enterprises, but following the incorporation of the forestry and fisheries subsectors into the department of agriculture, the credit policy is under review so that it can also accommodate these two subsectors.

Loans are provided at 8% interest and accessed through a network of institutions accredited by the DAFF as retail intermediaries. Intermediaries submit monthly and quarterly reports to the department as part of its monitoring process. Regular workshops and inspection visits to intermediaries are also conducted.

The scheme offers production loans of up to R500 000 per person, with the repayment terms structured according to the income cycle of the enterprise. The loans are limited to South African citizens who meet the eligibility criteria. Loans of up to R25 000 can be granted without security. Most of the loans disbursed are in respect of livestock, sugar cane and grain crops.

### Agri South Africa (AgriSA)

AgriSA was established in 1904 as the South African Agricultural Union. It serves approximately 32 000 large and small commercial farmers.

Its mission is to promote the development, profitability, stability and sustainability of agriculture in South Africa by means of its involvement and input on national and international policy and the implementation thereof.

Essentially AgriSA, through its affiliated membership, represents a diverse group of individual farmers regardless of gender, colour or creed. AgriSA's policy advocacy includes work on trade negotiations, industrial policy, taxation, financing, land reform, labour laws, training, farmer development, environmental affairs, water rights and water pricing, other input-related issues, farm safety, law and order, infrastructure, technology development and transfer, statistical information and local government.

Furthermore, the organisation maintains

an extensive communication network with its members and other affected communities, organisations and individuals. AgriSA is a member of high-level business, trade and agricultural entities that includes Business Unity South Africa, the International Chamber of Commerce, the World Farmers' Organisation, the Southern African Confederation of Agricultural Unions and the Cairns Group Farm Leaders.

AgriSA communicates with its members via its two-monthly magazine, namely *Agri* (incorporating *Die Boer/The Farmer*) and an electronic newsletter. It is also responsible for programme content for an agricultural radio programme aired on Radio Sonder Grense (RSG).

Agriculture in South Africa remains an important sector despite its relatively small contribution to the GDP. The sector plays an important role in terms of job creation, especially in rural areas, but is also a foremost earner of foreign exchange.

Agriculture's prominent indirect role in the economy is a result of backward and forward linkages with other sectors. Purchases of intermediate goods and services form backward linkages with the manufacturing sector, while forward linkages are established through the supply of raw materials to industry.

Approximately 70% of agricultural output is used as intermediate products. Agriculture is therefore a crucial sector and a key driver of growth for the rest of the economy – a fact also acknowledged in policy-related documents such as the NDP: Vision 2030.

Essentially, the NDP entails that agriculture – both emerging and commercial – should still be afforded the opportunity to contribute optimally to economic growth, job creation, foreign-exchange earnings and development of the industrial sector within a safe and non-discriminatory environment. AgriSA is preoccupied with ensuring a safe environment for all people involved in the agricultural sector. A sound working relationship has been established with the South African Police Service (SAPS) at both policy and operational level, with a view of addressing the relevant rural safety problems.

### Agricultural Business Chamber (Agbiz)

Agbiz is a voluntary, dynamic and influential association of agribusinesses operating in South and southern Africa.

Agbiz's function is to ensure that agribusiness plays a constructive role in the country's economic growth, development and transformation, and to create an environment in which

agribusinesses of all sizes and in all sectors can thrive, expand and be competitive.

- Agbiz is the only organisation that serves the broader and common over-arching business interests of agribusinesses in South Africa.
- Agbiz addresses the legislative and policy environment on the many fronts that it impacts on the agribusiness environment.
- Agbiz facilitates considerable networking opportunities so that South African agribusinesses can play an active and creative role within the local and international organised business environment.

The strategic intent of Agbiz is to advocate for and facilitate a favourable agribusiness environment in order for its members to perform competitively and sustainably.

### **Transvaal Agricultural Union South Africa (TAU SA)**

TAU SA was established in 1897 as the Transvaal Agricultural Union. In 2002, the union reorganised to become a national agricultural union serving commercial farmers. It also renders services to its members in terms of property rights, economic issues, and safety and security. TAU SA conducts various projects to enhance the concept of successful agriculture.

### **National African Farmers' Union of South Africa (NAFU)**

NAFU was established in 1991 with the aim of creating a "home" for thousands of black farmers who had previously been excluded from the mainstream of agriculture. At the time of its formation, there was no farmer organisation operating at national level in South Africa. Between 1979 and 1991, the only organisation which attempted to address the needs of black farmers at national level was National African Federated Chamber of Commerce and Industry (NAFCOC). This organisation eventually facilitated the formation of the Nafu.

NAFU is a mouthpiece of predominantly black smallholder farmers in South Africa. It strives to promote the interests of primarily black farmers who are largely a disproportionately disadvantaged farming community. NAFU therefore represents the aspirations of those who have been disadvantaged, neglected and marginalised.

The focus of Nafu has been on advocacy, and it has and continues to lobby for access to critical resources such as land, credit, information, extension and other support services. However, Nafu also played and continues to play a role in building the capacity and strength of

its membership through the use of effective communication systems, training, improving management skills and exposing farming to the latest and most up-to-date production techniques.

### **The African Farmers' Association of South Africa (AFASA)**

AFASA's objectives are to create a sustainable united body of African farmers with capacity to influence policies through lobbying and advocacy. AFASA, like any other organisation, is a collection of individuals who come together for a common purpose.

The DAFF is expected to support smallholder farmers through conditional grants such as the CASP, LandCare Programme, Ilima/Letsema Programme, as well as the mobilisation of farmers, women and youth into agricultural co-operatives.

### **Veterinary services**

Veterinary public health and food safety aspects, in relation to animal products, remain a priority and are receiving increasing attention. The department has set aside R100 million for the Primary Animal Health Care Programme. Special attention is being given to the major rehabilitation of existing infrastructure, as well as the building of new clinics, animal health centres and other animal-handling facilities. Mobile veterinary vehicles will also be considered for remote areas. These efforts support the creation of an enabling environment for the planned Compulsory Community Service Programme for newly qualified veterinarians.

To strengthen the DAFF's animal healthcare, 18 primary healthcare clinics were delivered to provinces and the Veterinary Strategy, as part of the Animal Disease Management Plan, was finalised.

In addition, the DAFF requested the OIE to conduct an evaluation on the performance of veterinary services in South Africa. The recommendations from the OIE report will be applied to further enrich interventions on all veterinary issues.

### **Agricultural Research Council**

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

The ARC operates under the Ministry of Agriculture, Forestry and Fisheries and is mandated by the Agricultural Research Act, 1990 to promote agricultural and related sectors.



The ARC's main functions, as provided for in the Act, are to:

- undertake and promote research, technology development and technology transfer
- use the technological expertise in its possession and make it generally available
- publish information concerning its objectives and functions, and establish facilities for the collection and dissemination of information in connection with research and development
- publish the results of research
- establish and control facilities in the fields of research, technology development and technology transfer that the council may determine from time to time
- cooperate with departments of state, institutions, persons and other authorities for the promotion and conduct of research, technology development and technology transfer
- promote the training of research workers by means of bursaries or grants-in-aid for research, technology development and technology transfer, and contribute financially
- research, development and technology transfer programmes
- hire or let facilities
- cooperate with persons and authorities in other countries conducting or promoting research, technology development and technology transfer in agriculture.

The African Farmers Association of South Africa (AFASA) approved the "My Kraal" mobile app – an innovative livestock management system which addresses significant challenges in this agriculture segment – for a pilot programme on a number of its member farms.

The "My Kraal" solution which is the brainchild of agriculture business owner and entrepreneur Gershon Ramazan and Tigoma Digital founders offers livestock ID and tracking through a basic and easy to use mobile app.

My Kraal assists farmers with improved herd management and control, ultimately increasing farmers income by having accurate herd data to trade cattle for a higher price on the digital platform with a mobile wallet for quick and secure payments. It increases production through veterinary support and training provided by strategic partner and leading animal health service provider Afrivet and Veterinary Network, and importantly combat stock theft with last reports highlighting a cost to SA in excess of R500 million per year. It also provides farmers with access to affordable livestock insurance.

In addition, all data analysed will be shared with the government, insurance companies and strategic partners offering predictive analytics on stock theft and disease management early warning alerts.

### Onderstepoort Biological Products state-owned company (SOC) Ltd

OBP SOC was corporatised in 2000 under the OBP Incorporation Act, 1999.

The OBP's mandate is the prevention and control of animal diseases that impact on food security, human health and livelihood. This mandate is delivered through the continued development of innovative products and efficient manufacturing processes that ensure the affordability and accessibility of vaccines through diverse distribution channels.

The OBP possesses the capability, skills and scientific expertise to combat animal disease through the large-scale production of specialised animal vaccines. The company produces millions of doses a year to control as many as 50 different diseases and is an acknowledged world leader in the battle against animal disease.

Experiments at the OBP have seen encouraging progress in the development of new and improved vaccines against African horse sickness, which, despite the development of immunisation programmes, remains a constant threat to farmers, breeders and owners.

### Grain SA

Grain SA was established on 10 June 1999 and was formed out of National Maize Producers' Organisation (Nampo) (maize), National Oilseed Processors Association (Nopa) (soybeans, sunflower and groundnuts), the Wheat Producers' Organisation (WPO) (wheat, barley and oats) and the SPO (grain and sorghum). The mission of Grain SA is to provide commodity strategic support and services to South African grain producers to support sustainability.

The purpose of Grain SA's strategic focus areas is not only to increase the profitability of producers and to establish sustainable food security in general; it is also aimed at establishing transformation within the parameters of constitutional rights. Thus far the members of the agricultural community have been sharing authentic success stories of transformation and integration among themselves.

Grain SA's unity with its producer members at grassroots level has proven to be invaluable for this process. It therefore remains critical that the organisation, through regional, information, farmer unions and branch meetings, maintains a visible and active presence. These meetings allow GrainSA to inform producer members of the latest developments in the grain industry, production prospects and well-researched economic facts. It also affords producer members the opportunity to share their concerns

with the organisation. In a further effort to enable producers to make well-informed decisions about their farming activities, GrainSA also supplies them with market reports.

GrainSA is in a sector which has the potential to contribute to all the pillars of rural development. The development programme is one of the core business units of GrainSA that are well supported by other units within Grain SA. This assistance is in the form of personnel and financial management as well as the overall leadership and guidance of the programme.

## Products

The field crop planted over the largest area of farmland is maize, followed by wheat and, to a lesser extent, sugar cane and sunflower seed. The grain industry is one of the largest industries in South Africa and is a very strategic one.

According to the Economic Review of South African Agriculture, the gross income from field crops numbered R51 019 by the end of 2015.

## Grains

Maize is the largest locally produced field crop, and the most important source of carbohydrates in the Southern African Development Community (SADC) region for animal and human consumption.

South Africa is the main maize producer in the SADC, with production at 12 million tons (Mt) to 14 Mt a year over the past 10 years.

It is estimated that about 6 500 commercial maize producers are responsible for most of the South African crop, while thousands of small-scale producers are responsible for the rest. Maize is produced mainly in North West, the Free State and Mpumalanga. Some 7,3 Mt of maize were commercially produced in 2015/16 on 1,9 million ha of land.

Wheat is produced mainly in the winter rainfall areas of the Western Cape and the eastern parts of the Free State. In 2015, 1,4 Mt were produced on 478 300 ha of land.

Malting barley is produced mainly on the southern coastal plains of the Western Cape. The area of barley planted totalled 90 350 ha in 2015, and production totalled 302 000 t.

Sorghum is cultivated mostly in the drier parts of the summer rainfall areas such as Mpumalanga, the Free State, Limpopo and North West. Some 88 500 t was grown on 48 500 ha in 2015.

## Oilseeds

Groundnuts are grown mainly in the Free State, North West and Northern Cape. An area of

34 400 ha was planted in 2015/16, producing 35 745 t.

Sunflower seed is produced in the Free State, North West, the Mpumalanga Highveld and in Limpopo. South Africa is the world's 10th largest producer of sunflower seed. An area of 718 500 ha was planted in 2015/16, producing 742 750 t.

Soya beans are produced mainly in Mpumalanga, the Free State and KwaZulu-Natal. Small quantities are also produced in Limpopo, Gauteng and North West. For the 2015/16 production season, soya beans were planted on 502 800 ha, with production totalling 750 250 t.

Canola is an oilseed crop grown mainly in the Western Cape. Canola competes on the local market with other oilseeds such as sunflower seeds and soya beans. For the 2015 production season, the canola crop was estimated at 121 000 t on an area of 87 000 ha.

## Sugar

South Africa produces cost-competitive high-quality sugar. The sugar sector is a diverse industry, combining the agricultural activities of sugar-cane cultivation with the industrial factory production of raw and refined sugar, syrups and specialised sugars, as well as a range of by-products. The cane-growing sector comprises about 29 000 registered sugarcane growers farming predominantly in KwaZulu-Natal, with a substantial investment in Mpumalanga and the Eastern Cape.

Sugar is manufactured by six milling companies with 14 sugar mills operating in these cane-growing regions.

About 340 000 ha was planted and 245 000 ha was harvested. About two-thirds of South Africa's sugarcane is grown within 30 km of the coast and one-sixth in the high rainfall areas of KwaZulu-Natal. The remainder is grown in the northern irrigated areas that comprise Pongola and Mpumalanga lowveld. The industry produces an estimated average of 18,8 Mt of sugarcane (2,2 Mt of sugar) per season. About 60% of this sugar is marketed in the Southern African Customs Union (SACU).

Direct employment within the sugar industry is approximately 79 000 jobs, which represents a significant percentage of the total agricultural workforce in South Africa. Indirect employment is estimated at 350 000.

In addition, there are approximately 29 130 registered cane growers. Approximately one million people, more than 2% of South Africa's population depend on the sugar industry for a living.

## Deciduous fruit

The deciduous fruit industry in South Africa, including fresh, dried and canned fruit for local consumption and export, is a multimillion rand industry. It is based on scientific research and development, resulting in optimum harvests and quality, a large variety of cultivars, and finely controlled storage methods. Deciduous fruits grown in South Africa include apples, pears, apricots, nectarines, peaches, plums, grapes, olives, figs and cherries.

Deciduous fruit is grown mainly in the Western Cape and in the Langkloof Valley of the Eastern Cape. Smaller production areas are found along the Orange River and in the Free State, Mpumalanga and Gauteng.

In 2015/16, 80 469 ha of deciduous fruit was planted, in contrast with 79 803 ha in 2014/15 – an increase of 666 ha. Some 1,7 Mt of fruit were produced in 2015/16 with a gross value of R11 billion.

## Cotton

Cotton is cultivated in the Northern Cape, Limpopo, Mpumalanga, KwaZulu-Natal and North West. It constitutes 74% of natural fibre and 42% of all fibre processed in South Africa. It is grown under irrigation, as well as in dry-land conditions. Some 8 353 ha are dedicated to cotton production, with 70% under irrigation.

## Tobacco

Virginia tobacco is produced mainly in Mpumalanga, Limpopo, Eastern Cape, Western Cape and North West.

Flue-cured leaf tobacco contributes more than 79% to total production, with the number of ha cultivated for flue-cured tobacco being about six times the land cultivated for air-cured leaf tobacco. The industry produces 15 million kg tobacco a year.

There are 187 tobacco growers in South Africa operating on some 5 005 ha of land. Tobacco farmers employ about 8 000 – 10 000 farmworkers; in addition, more than 35 000 dependants are also able make a living in deep rural areas thanks to the tobacco industry.

More than 90% of tobacco used in South Africa goes toward the manufacturing high-quality tobacco products.

## Honeybush and rooibos tea

Honeybush production is a young, growing industry that is unique to South Africa. Honeybush is part of the fynbos that grows wild in the Cederberg area of the Western Cape and is not produced anywhere else in the world. The

plant grows naturally on the wetter and cooler southern slopes of mountains. Some species are mostly harvested in the wild, while others are cultivated commercially.

Some 230 ha of honeybush tea are under cultivation. It is harvested from the natural mountainous veld in the Langeberg and Swartberg in the Eastern and Western Cape and processed at farm-processing facilities.

The honeybush industry has the potential to grow from an annual average of 150 t of processed tea to 1 500 t by 2021 and to increase turnover from R10 million to R100 million. South Africa produces about 200 t of honeybush tea a year. Local and international demand exceeds supply.

Fewer than 10 farmers cultivate only 30% of honeybush tea and the rest (70%) is harvested in the wild.

Owing to the growing interest in the health properties of natural products and specifically, herbal teas, many biochemists round the world are investigating rooibos. The rooibos plant grows well in the Cederberg area, where temperatures drop to 0°C during the winter months and rise to 48°C at the height of summer. On average, South Africa produces about 15 000 t of rooibos tea a year. South Africans consume 4 500 to 5 000 t and the rest is exported.

Stress, ageing, cancer and obesity are some of the lifestyle challenges that featured prominently in the South African Rooibos Council's research budget of R2 million in 2012. In addition to these health-focused projects, researchers also received funding to explore the chemistry, composition and flavour profile of this unique African herbal tea, or to advance organic and environmentally friendly rooibos farming. Prominent, independent researchers at South African universities and science councils lead the research projects.

Since July 2014, South Africa has won the right to secure geographical indicator status for Rooibos tea. This enables Rooibos tea growers to look for new markets in Asia and increase those that already exist.

ARC Infruitec-Nietvoorbij is responsible for managing nine genebanks. The genebanks include field collections of various deciduous tree fruit crops, grapevines, olives, indigenous flowers of the Proteaceae and honeybush, in vitro collections of yeasts, fungi and bacteria as well as some tree fruit and berry crops in medium-term cold storage.

The main purpose of the field genebanks is to conserve genetic diversity of fruits, grapes and indigenous crops, particularly in support

of breeding programmes; the yeast collection contributes to oenological research; and the fungal and bacterial collections provide for research and diagnostics.

Your much-loved cup of rooibos or honeybush tea not only tastes great - new research presented at the CANSA Research in Action Conference shows that it may help to ward off cancer too.

Two distinctly South African teas have been fingered for their potential to treat two of the country's biggest cancer killers.

New research, presented recently at the CANSA's Research in Action Conference, showed that rooibos and honeybush both have anti-cancer properties that may be useful in the treatment of prostate and breast cancer.

These are the two most common cancers affecting South Africans. One in every 26 men will be affected by prostate cancer in their lifetime, while one in every 33 women will develop breast cancer, according to the latest data from the National Cancer Registry.

With its high levels of antioxidants, rooibos has long been known for its ability to help prevent cancer from developing, but this new research shows that it could potentially also be used to treat – but not cure – the disease.

In laboratory studies, Stellenbosch University (SU) biochemist Prof Amanda Swart found rooibos extract interferes with the male sex hormone dihydrotestosterone – which is one of the main drivers of prostate cancer. This action is similar to that of current drugs used in the treatment of prostate cancers.

Molecular testing showed that honeybush extract contained chemicals that can either block or increase oestrogen, which may drive the growth of some types of cancers.

Although still in the testing phases, honeybush-derived therapy may one day be used as a second-line drug against some of these cancers.

## Wine

South Africa is described as the most exciting New World wine-producing country, because of a combination of old vines, new regions and wine-making talent. Record harvests, a weaker rand and poor European crops benefit South African wine-makers.

Nietvoorbij, the internationally-acclaimed research farm of the ARC, is synonymous with quality research in enology and viticulture. Annually, 1 000 different wines (10 – 20l) are made for research purposes in the modern experimental cellar. Next door, in the old, thatched roof cellar, traditional and modern winemaking methods are

combined to create unique wines for enjoyment.

Some 1 156 million litres of wine were produced in 2015. There was a decrease of 25 million litres in the industry owing to the loss of ha as result of fires in the Western Cape.

## Citrus and subtropical fruit

South Africa ranks 13th in world citrus production and despite increased competition, its citrus exports are growing. The country is also the world's third largest exporter of fresh citrus fruit by volume, after Spain and Turkey.

Citrus production is largely limited to irrigation areas and occurs in Limpopo (23 970 ha), Eastern Cape (14 770 ha), Western Cape (9 232 ha), Mpumalanga (9 375 ha), KwaZulu-Natal (3 192 ha), and Northern Cape (1 451 ha). Pineapples are grown mainly in the Eastern Cape and northern KwaZulu-Natal.

Other subtropical crops such as avocados, mangoes, bananas, litchis, guavas, papayas, granadillas and macadamia and pecan nuts are produced mainly in Mpumalanga and Limpopo, as well as in the subtropical coastal areas of KwaZulu-Natal and the Eastern Cape.

Citrus exports to the EU rose from 615 000 t in 2014 to 681 000 t in 2015, despite South Africa again voluntarily suspending exports from citrus black spot areas.

The Citrus Emerging Excellence Programme was implemented during the year under review and a report has been compiled. The programme has been a learning curve for the farmers, Citrus Academy and DAFF. The programme managed to reach out to growers who were in need of training and it offered them an opportunity to understand the citrus export market and other elements in the value chain.

The South Africa Good Agriculture Practice (SA-GAP) Certification Programme for smallholder producers of fresh produce was also implemented. A total of 12 farms were certified.

Citrus production for 2015/16 was 2 470 659 t compared to 2 576 454 t in 2014/15. The production of citrus decreased by 105 795 t in 2015/16, while the gross value of citrus production for 2015 came to R12,6 billion.

## Vegetables

Potatoes are grown in 16 distinct potato production regions throughout the country.

About 34% of South Africa's potato crop is produced in the Free State, 20% in Limpopo and 15% in the Sandveld area of the Western Cape.

About 87% of the country's total potato crop is produced under irrigation. Of the total crop, 48% is delivered to fresh produce markets and 18% is

processed. Frozen French fries contributed 43% processed potato products.

In terms of gross income to the grower, potatoes are by far the most important vegetable crop, contributing about 39% to total income from vegetables.

Production of vegetables amounted to 5,2 Mt in 2015, an increase of 306 000 t. The gross value of production also increased to R18 063 million, representing an increase of R933 million.

Tomatoes are produced countrywide, but on the largest scale in Limpopo, the Mpumalanga Lowveld and Middleveld, the Pongola area of KwaZulu-Natal, the southern parts of the Eastern Cape and the Western Cape. In Limpopo, South Africa's main tomato-growing area, most of the crops are found in Letaba (3 260 ha), Mooketsi and Musina (860 ha). Limpopo's total annual production is about 230 000 t.

Onions are grown mainly in Mpumalanga, certain areas of the Western Cape and the southern Free State and in all areas of Limpopo with the main production areas being Polokwane and Mokopane. Onions have an estimated planting area of 6 500 ha to 9 000 ha and a retail value of R200 million a year.

Cabbages are grown countrywide, but the largest crops are in Mpumalanga and the Camperdown and Greytown districts of KwaZulu-Natal.

Dry beans are produced mainly in Mpumalanga, the Free State, Gauteng and North West. KwaZulu-Natal, Limpopo, the Western Cape and Northern Cape produce small quantities of this crop. Local demand is substantially higher than local production and, therefore, large quantities of dry beans are imported each year.

Production of vegetables amounted to 5,2 Mt in 2015, an increase of 306 000 t. The gross value of production also increased to R18 063 million, representing an increase of R933 million.

## Livestock

Animal production contributes approximately 48% to the country's agricultural output in terms of value. The industry employs about 500 000 people.

The ARC, in partnership with all the provinces, will roll out the implementation of the Livestock Development Programme. In this initiative, the ARC will introduce and expand on the dissemination of technologies, such as artificial insemination and embryo transfer.

The National Agriculture Marketing Council (NAMC) is also actively engaged in a programme to introduce farmers to the structure, operation and requirements of the formal red meat market.

This is the National Red Meat Development Programme. It works with emerging and communal farmers to increase the income earned from raising cattle through greater and more beneficial participation in formal red meat markets.

The National Livestock Development Strategy aims to enhance the sustainability of animal agriculture in South Africa across the entire production, processing and supply chain.

By mid-2016, a conservative estimate of the value of South Africa's livestock industry was around R50 billion. The FMD free status has enabled the country to negotiate market access for cloven-hoofed animal products. We are in the process of negotiating the export of game meat to the EU and beef to the Middle East.

In safeguarding the country's biosecurity, the ARC has developed a new vaccine against Heartwater that will be made available to farmers after evaluating for safety and registration by the authorities. The availability of a Heartwater vaccine will boost mohair production as Angora goats are the most susceptible to animal diseases.

Development of new vaccines will play a vital role in expanding the number of successful livestock farmers resulting in reduced losses and increase in revenue for the farmers

## Dairy farming

Milk production in South Africa contributes about 0,5% to the world's milk production. South Africa has four major dairy breeds, namely Holstein, Jersey, Guernsey and Ayrshire. The industry comprises various economic activities with, significant differences in farming methods and the processing of dairy products, including the production and marketing of raw milk, pasteurised milk and cream, fermented milk, long-life milk and cream, yoghurt, and cheese and its by-products.

The South African dairy industry is important to the job market, with some 2 700 milk producers employing 60 000 farmworkers and providing 40 000 people with indirect jobs within the value chain, such as milk processing.

## Beef cattle farming

Beef is produced throughout South Africa. The quantity of beef produced depends on infrastructure such as feedlots and abattoirs, and not necessarily on the number of cattle available in those areas. South Africa has a highly developed transport infrastructure that allows for movement of cattle from one area to another, even to and from neighbouring

countries, for example, Namibia. Commercial farmers own 59% of the 14 million head of cattle available in South Africa. There are 27 popular breeds in South Africa including the Brahman, indigenous Afrikaner and Nguni, Tuli, Boron, Bonsmara, Drakensberger, Simbra, Beefmaster, Angus and Braford.

### **Small stock (sheep and goat) farming**

South Africa has about 8 000 commercial sheep farms and about 5 800 communal farmers. Most of the estimated 24,4 million sheep in South Africa is found in the Eastern Cape, followed by the Northern Cape, Free State, Western Cape and Mpumalanga.

The sheep breed with the highest wool production per head is the South African Merino, followed by other dual-purpose Merino breeds, such as the Dohne Merino, South African Mutton Merino, Afrino and Letelle breeds. Dual-purpose breeds are bred with the specific aim of maximising wool and mutton produce.

Mutton sheep are found mostly in the semidesert areas of the Northern and Western Cape, with the most popular mutton breed being the locally developed Dorper. Limited numbers of indigenous fat-tailed and Karakul sheep are still found. Karakul sheep are found in the more arid areas.

The Eastern Cape has the largest number of goats (38%), followed by Limpopo (19%). The indigenous meat-producing Boer goat accounts for about 40% of all goats in South Africa. Almost all of South Africa's Angora goat (mohair) farmers are located in the Eastern Cape, where they farm with about one million goats.

The South African mohair clip of four million kilograms, accounts for 60% of the world's mohair production. About 63% of all goats in South Africa are so-called indigenous goats.

South Africa is also geared towards the conservation of indigenous Speckle goat and Namaqua Afrikaner Sheep breeds.

### **Pig and poultry farming**

The South African pork industry is relatively large, in terms of the overall South African agricultural sector. It contributes 1,9% to the primary agricultural sector. The gross value of pork production is dependent on the quantity produced and the price farmers received.

The trend in gross value follows a pattern of prices, because the industry is characterised by volatile prices.

Pork is produced throughout South Africa with Limpopo and North West being the largest producers, contributing to 44% of total production.

There are about 4 000 commercial, 19 stud and about 110 smallholder pig farmers; they own about 125 000 sows (100 000 commercial and 25 000, smallholder farmers); they employ about 10 000 workers, comprising about 4 000 farm workers and 6 000 workers in the processing and abattoir sectors.

The 46 registered pig abattoirs use modern technology to ensure a streamlined slaughtering process. The predominant pig breeds are the South African Land Race, the Large White, Duroc and the Pietrain.

The poultry industry (including meat and eggs) continues to dominate the agricultural sector in South Africa, and is the main supplier of protein in kilogramme terms to the South African consumer, as more poultry products are consumed per year than all other animal protein sources combined.

The poultry industry is an essential component of South Africa's food value chain. It is the single largest component of the agricultural sector in the country by turnover.

Although poultry producers remain the largest segment of South African agriculture, they have been facing challenges regarding input prices, which put profit margins in broiler production under pressure.

The volatility in price and profitability is inherent to the broiler industry, because biological factors, such as poultry diseases and prolonged turnaround times in the production chain, combined with hikes in feed costs, electricity and fuel have a direct impact on production costs.

Chicken imports contributed 91% to total poultry imports, turkey imports amounted to 8% and ducks, geese or guineafowl totalled 0,1%.

The per capita consumption of poultry meat was 38,3 kg a year, compared to 39,93 kg in 2012.

The gross value of primary agricultural production from poultry meat, inclusive of all types of poultry, for the period 2012 was R29,845 billion, reflecting an annual increase of 16,8%.

Along with being the primary source of protein, the poultry industry remains an important contributor to job creation and employment opportunities. Some 10% of all agricultural sector workers are employed in the poultry sector.

Considering the dominance of the poultry industry in South Africa, it also has the largest influence on the feed industry as its main customer. The South African Poultry Association estimates that a total of 107 857 people (48 118 direct and 59 739 indirect) are employed in the broiler, hatchery, rearing, processing and distribution industries.

At a gross turnover of R8,6 billion at producer level, eggs take their place as the fourth largest animal product sector in agriculture in South Africa.

Considerable scope exists for increased per capita consumption, particularly taking into account the price competitiveness of eggs as a protein source, compared to other animal proteins.

The industry remains an important employer with an estimated 8 000 workers.

Regarding the African Growth and Opportunity Act trade, although the deadline of 31 December 2015 passed without agreement, an agreement was reached on 6 January 2016 on the relevant three meats, namely beef, pork and poultry. The proclamation made by the USA not to suspend agricultural imports was extended to 15 March 2016. However, the agreement was eventually signed by the USA and is currently in force.

The DAFF has already issued permits for the first 16 250 t of poultry meat to 29 importers, of which nine are HDIs. Under AGOA, the agricultural sector has advantages for the exports of citrus, macadamia nuts, wine and other food products.

However, implications of the concessions are that the EU and other partners may require equal treatment, which will require readjustment of the current agreements with trading partners. Concerning SPS-issues, a protocol for highly pathogenic avian influenza was signed between the two countries in November 2015.

### Hunting and wildlife sector

South Africa has a proud tradition of consumptive hunting that has made a major positive impact on conservation and sound game management practices. Consumptive use includes venison production (game meat and biltong), and trophy and recreational hunting; while non-consumptive use includes ecotourism activities and accommodation.

Hunters are the backbone of the private wildlife industry and the main source of income for the 11 500 private game farms of which many are located on marginal agricultural land in South Africa. South Africa is a popular destination for trophy hunters and receives approximately 9 000 international hunters a year whose combined expenditure on hunting and related industries contribute R1,24 billion to the economy.

The five most popular hunting provinces in South Africa are Limpopo, Northern Cape, Eastern Cape, North West and Free State. The top five game species among international trophy hunters are, among others, springbok,

impala, kudu, blesbok and black wildebeest. This is very similar to the five most popular species among biltong/consumptive hunters: springbok, impala, blesbok, warthog and kudu. It is kudu in particular, that is a popular and profitable species for game farmers.

The hunting sector in South Africa is represented by various voluntary associations and organisations that serve the interest of both consumptive and professional hunters. The SA Hunters and Game Conservation Association (SAHGCA) with over 38 000 members is the biggest single representative body for hunters in South Africa.

SAHGCA and other hunting associations in South Africa have taken the lead in wildlife conservation by advocating and practising responsible, sustainable hunting as the most effective wildlife management mechanisms that support the game ranching sector in the country.

## Programmes and projects

### Regulatory services

The department's regulatory activities include: the inspection of plants, animals and their products to prevent the introduction and distribution of quarantine pests and diseases; to also ensure that exported animals/plants and their products are free from quarantine pests and diseases.

South Africa is an active member of the World Organization for Animal Health. Disease reports are received from the Organisation for Animal Health and through direct contact with veterinary administrations in exporting countries.

Trade in animals and animal products are regulated to prevent the entry of diseases.

The department also ensure compliance with agricultural legislation by conducting inspections at designated ports of entry. Preborder inspections are aimed at exports for compliance with international requirements among trading partners. Post-border inspections are intended for those regulated articles that were given extended detentions at borders or escaped the border control inspections.

Plants and plant products are inspected for compliance with plant health, genetic resources and food and quality-assurance legislation. The department conducts surveillance for regulated pests and/or national pests of concern throughout the country.

The Pest Risk Analysis Division conducts scientific analysis of risks posed based on scientific data. Risks associated with the importation of plant propagation material are managed by prescribing a compulsory predetermined quarantine detention period for

specific high-risk categories.

To prevent the introduction of harmful exotic plant pests, all imported plant material is tested and audited. The department renders diagnostic services to ensure that all imported and exported products comply with international standards.

Closely linked to early detection is the implementation of proper pest-awareness programmes to keep the agricultural sector and the general public informed.

Through its Import/Export Protocols Division, the department ensures and maintains market access for South African plants and plant products. This includes exchanging plant health information and expertise in terms of bilateral engagements, and maintaining bilateral export/import programmes.

Despite having maintained the country's lucrative fruit export markets, production and exports are still under threat. Accordingly, imports of host fruit from countries where pests have been established must be appropriately managed. This emphasises the importance of border control and risk management responsibilities.

### Food import and export standards

Internationally, standards for food imports and exports are harmonised through various international standard-setting bodies subscribed to under the World Trade Organisation (WTO) and to which South Africa is a signatory, including the Sanitary and Phytosanitary Measurements Agreement, World Organisation for Animal Health, Codex Alimentarius Commission and the Intergovernmental Panel on Climate Change. These requirements aim to protect consumer rights, the environment, animal life and public health.

Through its Directorate: Food Import and Export Standards, the department collates information regarding the standards for sanitary and phytosanitary measures applicable to trade in animal and plant products. The DAFF also coordinates promotion and awareness programmes addressing cross-cutting standards and legislative requirements for food safety, quality, and plant and animal health.

The department and the Perishable Products Export Control Board (PPECB) work closely to assist South Africans – within the ambit of the law – to export their products successfully in a highly competitive global arena.

### National analytical services

The DAFF has laboratories in Pretoria and Stellenbosch that conduct analytical services.

They support the units within the department responsible for formulating and updating regulations regarding agricultural foods of plant origin and liquor products.

### Disaster and risk management

The National Agricultural Disaster Risk Management Committee provides strategic guidance on policy and advises the Ministry of Agriculture, Forestry and Fisheries on issues relating to agricultural disaster risk management. The committee comprises members from provincial departments of agriculture, organised agriculture such as Nafu, Agri SA, TAU SA and ARC and relevant directorates within the department.

The established National Drought Task Team, chaired by the DAFF, advises the National Disaster Management Advisory Forum on drought management. The task team comprises provincial disaster management centres, organised agriculture such as Nafu, Agri SA, TAU SA and ARC, and relevant directorates within the department. The department frequently responds to hazards such as droughts, veld fires, floods and outbreaks of pests and disease, which includes the control of migratory pests such as locusts and quelea. It is also responsible for the control of the blackfly pest.

### Weather and climate Climate change

The agricultural sector in South Africa faces considerable impact from climate change, which affects the livelihoods of most people, especially those who are vulnerable to food insecurity.

South Africa responds to international obligations regarding climate mainly through the DEA, but the DAFF, as well as other departments such as those of mineral resources, energy, science and technology, and water affairs are also involved. The Climate Change Programme implemented by the DAFF includes programmes on raising awareness, policy development, the development of sector mitigation and adaptation plans, conducting vulnerability assessments countrywide, and identifying and coordinating climate-related research projects.

South Africa is a full member of the Global Research Alliance which, among other objectives, aims to enhance collaborative research into reducing agricultural emissions and increasing support and resourcing for agricultural emissions research.

### Early warning unit

The increasing risk of disaster is reduced by strengthening early warning systems and



disseminating early warnings, as well as raising awareness through campaigns. This helps to build resilient farming communities.

The DAFF has, therefore, developed and implemented an Early Warning System (EWS) that disseminates extreme weather warnings to farming communities. The EWS communicates monthly advisories and daily extreme weather warnings, in support of reducing disaster risk.

The implementation of the EWS is continuously monitored and evaluated to identify and address gaps in the system. National Agro-meteorological Committee meetings are held quarterly.

## Drought

The drought in 2015/16 has had a devastating effect on the agricultural, forestry and fisheries sectors, as well as the agricultural value chain.

Six provinces (KwaZulu-Natal, Free State, Mpumalanga, Limpopo, North West and Northern Cape) were declared disaster areas, while the Western Cape and Eastern Cape have only declared certain district municipalities as disaster areas.

The DAFF has also implemented relief and risk reduction measures in line with the Disaster Management Act, 2002 (Act 57 of 2002). The department, collaborating with provincial departments of agriculture allocated an amount of R381 million towards drought relief following the reprioritisation of the CASP and Ilima/Letsema programmes, focusing on the provision of animal feed and the drilling and equipping of boreholes for smallholder and subsistence producers.

The provincial equitable share funds to a total of R124 million was allocated to assist with the relief of smallholder producers with animal feed and water reticulation for livestock consumption.

The government's response to the drought amounted to more than R1 billion. Included in this amount was the allocation of R528 million to smallholder producers and at least R130 million to support indebted commercial farmers by the Industrial Development Corporation (IDC) and Land Bank. The IDC had also committed R500 million in soft loans to producers.

The drought has reduced the domestic production in South Africa and the SADC region. Staple foods like maize and beans were hit the hardest by the severe drought conditions. Significant quantities of maize will have to be imported in 2016.

South Africa is expected to import 3,8 Mt of maize into the country, while about 189 707 livestock farmers are affected, including approxi-

mately 3,6 million livestock units.

To mitigate the impact of the drought, just under R1 billion has been set aside to procure feed for livestock, establish fodder banks and drill boreholes. Production packages will also be provided for the grain planting season.

## Sustainable resource management and use

The DAFF and the ARC's Institute for Soil, Climate and Water have developed an inventory of soils, terrain forms and climate (land types). The National Land Type Survey, available for use at a 1:250 000 scale, aims to assist and guide land-use planning and decision making at national level.

All available natural-resource spatial information and other required data sets, including the latest Spot 5 satellite imagery and agricultural information, are found on the internet-based Agricultural Geo-Referenced Information System (Agis). Using interactive web-based applications, Agis provides access to spatial information, industry-specific information and decision-support tools.

The Advanced Fire Information System (Afis) tracks all fire outbreaks in the SADC region through the use of Moderate-Resolution Imaging Spectroradiometer satellite imagery. The information may be viewed at [afis.meraka.org.za](http://afis.meraka.org.za).

## Soil degradation

Soil degradation is largely related to the decline in organic soil matter. Monoculture cereal production, intensive tillage, short-term fallow periods and limited crop rotation have contributed to this in the commercial sector.

Excessive fuel-wood collection, inappropriate land use, population density and overgrazing are the main causes of soil degradation in communal areas. In addition, it is estimated that about 60% of the cropland area is moderately to severely acidic, and probably at least 15% is affected by subsoil acidity.

It is calculated that 1,5 million ha (around 1% of the land surface) have a high to extremely high erosion risk. More than 11 million ha (9%) are classified as having a moderate erosion risk, and 17% as very low to very low risk.

It is estimated that 25% of South Africa is covered by soils that are also potentially highly susceptible to wind erosion. These include the sandy soils in the western half of the "maize quadrangle" in the North West and the north-western Free State – the areas that produce 75% of the country's maize.

South African soils are also extremely prone to serious soil compaction, particularly under

intensive mechanised cultivated agriculture, in both dry land and irrigated land. It is a problem throughout the country and much more widespread and serious than the global norm.

Large areas of South Africa are covered with soils prone to serious crusting (surface sealing). The extent resulting and awareness of it have increased sharply over the last two decades.

Human-induced soil acidification is a major problem. Its effect is severe since it impacts on the country's scarce, arable land, especially the limited high-potential agricultural land. Soil-fertility degradation is a concern.

In commercial agriculture, there has been nutrient capital-building of some nutrients, especially phosphorus and zinc. In some cases, phosphorus has built up to excessive levels, where it starts to reduce crop yields.

### Genetically modified organisms

Genetic modification (GM) provides a way to meet the growing demand for food without placing greater pressure on scarce resources.

South Africa has commercialised three different GM crops, namely maize, cotton and soya beans. The latest approval of GM crops for commercial use was in 2012, for GM maize that is resistant to certain insect species and herbicide-tolerant. In 2012, the area under GM crop production was estimated to be 2,9 million ha. Of the total (2,73 million ha) maize produced, 86% (2,428 million ha) is estimated to be genetically modified. The adoption rate for herbicide-tolerant soya bean is 90%, and for cotton, 100%.

South Africa is the ninth largest producer of genetically modified crops in the world and remains the pioneer for the adoption of genetically modified crops. This is aligned to Section 24 of the Constitution, which advocates for sustainable use of biodiversity

### LandCare Programme

The National LandCare Programme is a government-supported community-based initiative, which is active throughout the country. Driven by both the public and private sectors through partnerships and cooperation, it seeks to:

- conserve natural resources
- use them in a sustainable way
- create a conservation ethic through education and awareness
- create jobs and address poverty by launching various natural resource rehabilitation, improvement and conservation projects.

Serious concerns about land and water degradation are identified in each province and specific

projects address these issues. Projects have been implemented in all nine provinces through the LandCare Conditional Grant, whereby ring-fenced funding is transferred to provinces, in terms of the Yearly Division of Revenue.

Four subprogrammes, namely WaterCare, VeldCare, SoilCare and JuniorCare, are all part of the LandCare Programme.

The LandCare Programme is aligned with government's broader objective of job creation. The temporary jobs created under the programme are funded through the EPWP and the LandCare Programme adheres to the target of 55% women, 40% youth and 2% people with disabilities as specified by the EPWP.

Funding for these projects is transferred quarterly to the respective provincial departments as implementing agents, as conditional grants under the Division of Revenue Act (DORA). Assessment and reporting requirements are specified in DORA, as well as by the EPWP. The provincial departments use the reporting tools provided by the EPWP to report on the number of jobs created.

Additional monthly, quarterly and annual reports are forwarded by the provincial departments to DAFF to monitor performance and the impact of the programme on the state of the natural agricultural resources.

### WaterCare

WaterCare promotes the development of techniques for water-resource management and encourages opportunities for training in this field.

The rehabilitation of irrigation schemes increases water supply and household food security. Irrigated agriculture is by far the biggest single user of run-off water in South Africa and has substantial potential to make a significant socio-economic and social impact on rural society. It contributes more than 30% of the gross value of the country's crop production.

The DAFF has embarked on a process to rehabilitate irrigation schemes that have the potential to increase food production, eradicate poverty, create jobs and contribute to economic growth.

About 90% of the country's fruit, vegetables and wine are produced under irrigation.

### VeldCare

This programme promotes best grazing systems and erosion-prevention practices to improve production.

It develops and maintains agricultural activities in accordance with the principles of ecologically sustainable development.

Economic and social development opportunities are realised by improving grazing areas and maintaining viable grazing areas throughout rural communities.

### SoilCare

The Conservation Agriculture (CA) approach has encouraged the proactive and sustainable use of agricultural natural resources. CA aims to ensure the effective and sustainable use and management of natural resources through minimum disturbance of the soil.

CA integrates the management of soil, water and biological resources, to maintain and enhance land productivity and reduce the level of risk.

It further aims to protect the potential of natural resources, prevent soil and water degradation and ensure economic viability with a reduction in vulnerability to the effects of climate change.

The result of these practices will ensure continued household and national food security through crop production, while conserving the environment. CA is characterised by three principles:

- minimum mechanical soil disturbance (minimum tillage)
- permanent organic soil cover, particularly through available crop *residue*
- diversified crop-rotation practices.

### Junior LandCare

The objectives of Junior LandCare are to empower previously disadvantaged youth by providing training in facilitation and leadership skills.

This includes promoting food security at home and in schools, enhancing awareness of sustainable agriculture and stimulating the formation of youth clubs and projects that promote other components of LandCare.

Junior LandCare addresses the needs of young people in an integrated way and involves interdisciplinary approaches. This is done for youth both in and out of school.

### Smallholder development

In support of food security, the DAFF has persistently strengthened its support for smallholder producers and continues to do so with the involvement of both internal and external partners.

Support to smallholder producers is being synchronised through the department's co-ordinated Programme Management Unit, which comprises all DAFF technical support units.

The Programme Management Unit has been

established to reinforce smallholder support activities of the already existing Smallholder Development Working Group, which is constituted by other national government departments, the ARC and the provincial departments of agriculture. Smallholder access to markets is pursued and engagements with institutions such as the World Food Programme and the Food and Agriculture Organisation for such market opportunities are at an advanced stage.

A web-based platform of the supported smallholder producers is being developed to ensure proper data and updates on all smallholder activities. The implementation of the approved Strategic Plan for Smallholder Support is on track with support funding received from the Department of Trade and Industry's Employment Creation Fund.

Small-scale sugar cane farmers in the Nkomazi area of Mpumalanga are to benefit significantly from government's Jobs Fund and are expected to double their production and create 1 544 new and sustainable jobs.

The farms should, over a five-year period, increase production from 450 000 t of cane to 850 000 t per year.

The fund is targeted at established companies with a good track record and which plan to expand existing programmes or pilot innovative approaches to employment creation, with a special focus on opportunities for young people.

Akwandze Agricultural Finance Ltd, through funding provided by the Jobs Fund, is addressing this need by ensuring these farmers can get adequate, cost-effective and appropriate financing with favourable terms.

Akwandze is also providing a package of associated farmer support initiatives such as on-site service back-up, training and capacity building.

According to the South Africa Sugar Association, the number of small-scale sugar growers has declined by 33% – from 50 000 in 2005 to around 33 700 in 2011. The productivity of small-scale farmers has also been declining. The tonnage in sugar produced by small-scale farmers has dropped from 850 000 at its peak to 450 000 t per year.

Akwandze is also supporting a cooperative of 216 small-scale farmers called Siboshwa to expand their growing area of 83 ha by 20 ha, developing their irrigation infrastructure and ensuring everything is in place to maintain it according to manufacturer specifications. This should allow them to produce another 2 000 t of cane.

Akwandze has matched a grant of R50 million from the Jobs Fund with a further R70 million and will recapitalise irrigation infrastructure for 1 281 small-scale growers, which will help to rehabilitate 10 000 ha of sugar cane land.

Akwandze will also extend its lending capacity to the growers for replanting, fertiliser, weeding and irrigation costs. The result should be to double the total annual tonnage of sugar cane produced by small-scale growers in Nkomazi.

It is anticipated that the Akwandze Project will create 1 544 new full-time jobs and increase turnover for these small-scale growers.

The agricultural, forestry and fisheries sectors have the best multiplier effect for every Rand invested in terms of employment, exports, fiscal revenue and economic output.

With all conditions favourable, the agriculture and agro-processing value chain has the potential to increase the number of smallholders from 171 670 in 2013 to 471 670 in 2019; increase the value added of the sectors from R42,5 billion in 2012 to R48,9 billion in 2019 (or 2% real growth per year); real increase in the value of net exports from an annual average of R5,1 billion in 2012 to R5,8 billion in 2019 (or 2% real growth per year); decrease in the value of diesel, fertiliser and machinery imports from an annual average of R9,6 billion in 2012 to R7,4 billion in 2019 (or 3% real decline per year) and increase the number of jobs in the sector from 660 000 in 2012 to a potential one million jobs by 2030.

The intensification of the RAAVC will focus on the following five crucial areas, namely the implementation of the Agri-parks — expanding infrastructure support to 44 Agri-hubs and 88 farmer production support units; implementing APAP with special focus on the production of high value crops where R3,2 billion will be spent on projects and 11 082 jobs created; collaborating with private sector partners to leverage new investments; increasing market access for smallholders through the implementation of programmes such as SA-GAP and increasing intra-African trade and other global trade opportunities and continued implementation of the Aquaculture Lab in order to strive towards achieving total production of 8 100 t, 3 200 jobs and an additional R500 million investment.

Public entities, the ARC and the NAMC in particular, have been actively involved in the development of APAP/RAAVC over the past two financial years. The research and databases from the ARC's Soil Testing Laboratories was used in its spatial analysis and maps to determine which commodities can be produced in which places.

These maps have been overlaid with the mapping by the Department of Rural Development and Land Reform following their land audit.

The NAMC also supported APAP/RAAVC with economic analysis and their expertise in value chain mapping. The NAMC is also the coordinator for Strategic Infrastructure Project 11, which pertains to agro-logistics and rural infrastructure.

The PPECB has committed to expand the number of smallholder farmers with South African Good Agricultural Practice (SA-GAP) certification. We are also working with the OBP to secure adequate funding to ramp up vaccine production.

### Extension and advisory services

The National Policy on Extension and Advisory Services for the agricultural, forestry and fisheries sectors recognises and calls for the involvement of a wide array of stakeholders involved in the delivery of extension and advisory services through a pluralistic and integrated approach.

Such an approach is expected to ensure that extension and advisory services benefit from the distributed technical expertise, financial capital and other resources located across the stakeholder base. The DAFF targets to deploy 20 extension practitioners to commodity organisations per financial year.

The intention is to deploy 100 extension practitioners by 2019/20, to ensure that extension practitioners acquire skills and gain experience of a specific commodity value chain. The Western Cape and KwaZulu-Natal PDAs have already deployed extension practitioners to commodity organisations.

### Training

The agricultural sector boasts state-of-the-art training and research facilities.

At grassroots level, South Africa has a number of regular schools offering a range of agricultural subjects and specialised agricultural high schools such as Bekker High School in North West, Harry Oppenheimer Agricultural High School in Limpopo and Boland Agricultural High School in the Western Cape.

The Agricultural Research Council hosted the 3rd Global Conference on Agricultural Research for Development in April 2016.

The conference identified international research and innovation priorities as well as needs in national innovation systems so as to achieve future development goals, in particular for family farmers and poor communities.

Prospective farmers and technicians are trained at the country's colleges of agriculture such as Grootfontein Agricultural Development Institute in the Eastern Cape, Cedara College of Agriculture in KwaZulu-Natal and Madzivhandila College of Agriculture in Limpopo.

Universities (including those with and without designated faculties of agriculture) offer advanced degree courses and Bachelor of Technology degrees. Veterinary surgeons are trained at the University of Pretoria's Faculty of Veterinary Sciences at Onderstepoort.

This training potential is coupled with productive and robust research capacity in terms of scientists and researchers based at various organisations who are world leaders in their respective fields of agricultural research.

The ARC, several universities and various private-sector organisations, as well as some provincial departments of agriculture, which are responsible for technological development and transfer aimed at improving managerial efficiency on farms, conduct agricultural research.

### Research and innovation

The ARC, several universities and various private-sector organisations, as well as some provincial departments of agriculture, which are responsible for technological development and transfer aimed at improving managerial efficiency on farms, conduct agricultural research.

Through the Agricultural Science, Technology and Innovation Activities Coordination Committee, the department engages the Department of Science and Technology on joint issues of national importance within the National System of Innovation.

The research unit is also involved in the development and implementation of national research policies and strategies, such as the National Agricultural Research and Development Strategy. This encompasses the national priority-setting process, developing guidelines, administering a national research and technology fund and overall monitoring and evaluation.

The National Agricultural Research Forum (NARF) provides a platform for stakeholder consultations on research and development while the Government Agricultural Research and Development Action Group provide a platform for government and state-owned entities to plan research and technology development within the national agricultural research system.

The NARF facilitates consensus and makes recommendations to government on the coordination of research, development and transfer of technology to enhance national economic

growth, social welfare and environmental sustainability.

### Policy

The Directorate: Policy Research Support in the DAFF coordinates all agricultural research and development activities. The mandate of the Policy Research Support on policies extends beyond policies and strategies in research but covers the entire sector related policies.

The Policy Research Support Unit is responsible for ensuring that available sector policies are aligned to government protocols, which is conducted by subjecting available policies to the objectives of the main government policies, such as the NDP, to ensure that sector policies address government priorities.

The unit is also responsible for conducting the review of sector policies for alignment with the NDP.

### Animal identification

Under the Animal Identification Act, 2002 (Act 6 of 2002) the Minister declares animals for compulsory identification. The national register is available to the SAPS through the State Information Technology Agency to help it trace individual animals to their owners.

However, this can only be implemented successfully if all cattle, goats, pigs and sheep are marked in accordance with the Act.

### Regulation services

#### Pest control

The South African Pest Control Association (SAPCA) is the official representative of the pest, termite and woodborer-control industries. All SAPCA-qualified inspectors have to register with the DAFF.

South Africa regularly liaises with other countries and international organisations to ensure the transfer of pest-control technology.

To respond comprehensively to the management of regulated plant pests and diseases, the department, in close collaboration with the South African fruit industries, has developed an early warning surveillance programme for the quarantine of fruit flies. The technical forum continues to identify, prioritise and manage quarantine pest risks such as the African invader fruit fly.

In the global trade of food and food products, veterinary public health and food safety aspects in relation to animal products received increasing attention.

## Food security

To address the challenges of poverty, unemployment and inadequate access to food, the department has prioritised food security and agrarian transformation.

The objective of the National Policy on Food and Nutrition Security is to ensure the availability, accessibility and affordability of safe and nutritious food at national and household levels.

The department also worked with the private sector to develop the APAP, which will bring one million ha of underused land into full production over the next three years.

Through APAP/RAAVC, the department aims to bring more smallholders into the mainstream as envisaged in the NDP. However, the effective participation of the previously excluded black majority in agriculture and food production will only occur meaningfully, when they have access to land and the means to work it.

An inclusive and scientific process will be used to assess the situation in terms of land capability for different commodities and in different localities, so as to inform land acquisition and allocation for different categories of producers across the country.

Although the country can maintain the ability under normal weather conditions to meet national food requirements, more than 14 million citizens have insufficient access to food, are vulnerable to hunger and are food insecure. In order to reduce hunger and ensure that good nutrition is attained, the DAFF will focus on the promotion and empowerment of smallholder producers.

These producers are supported in various ways, among others, by providing production inputs, training and advisory services, as well as access to finance and credit through MAFISA, CASP and Ilima/Letsema. These interventions have increased their competitive edge towards becoming sustainable producers to provide products to markets. Through the Fetsa Tlala initiative, the department's strategic objective is to use one million ha of land in rural areas for the production of crops.

To ensure mechanisation support to smallholder producers, the National Mechanisation Policy creates a favourable regulatory environment in which government will continue to make agricultural machinery such as tractors available to smallholder producers to ensure the optimal production of food.

An innovation, which we are proud of and that will boost production and trade, is the drought tolerant maize cultivar which was launched by the ARC in 2014. Results indicate that farmers who

planted the new maize cultivar experienced on average 50% increased yields when compared to conventional varieties available on the market. We now have to ensure that sufficient seed is available for farmers.

The final small-scale fisheries regulations were gazetted on 8 March 2016, along with the Marine Living Resources Amendment Act signed by the President. These now provide the legal mechanism for the implementation of the small-scale fisheries policy. These reforms give legal recognition to small-scale fishers and will promote the transformation of the subsector to assist fishing communities living along the coastal areas in creating sustainable livelihoods, generating income and creating jobs.

Aquaculture has been given a boost through its inclusion in the Oceans Economy Operation Phakisa. Through Operation Phakisa and the detailed plans on the development of 24 marine and inland aquaculture projects, which are being implemented, we expect to increase production from the current 4 000 t to 20 000 t per year, increase the current value of the subsector from R400 million to R6 billion per year and create up to 210 000 sector jobs by 2030.

## Fetsa Tlala Food Production Initiative

The Fetsa Tlala Food Production Initiative that was launched in 2013 mobilised smallholder producers to increase production and to access export market opportunities through, for example, the World Food Programme.

Initially, the initiative sought to put one million ha of underutilised agricultural land in communal areas and land reform farms back in production.

However, provinces achieved a mere 52 015 ha (43%) of the targeted 120 000 ha under Fetsa Tlala for 2015/16 due to the drought. The department will accelerate support programmes and continue to forge partnerships with the private sector and other relevant stakeholders to claw back on the upward trajectory for Fetsa Tlala for the coming production seasons.

For example, 150 000 ha of land are targeted for production through CASP and Ilima/Letsema in 2016/17 and R880 million is set aside for this purpose. Collaboration with the private sector partners like Massmart, Tiger Brands Pioneer Foods and Motsepe Foundation and InBev to advance the Fetsa Tlala and the One Family One Hectare has been initiated. This also includes leveraging the current government funding to secure participation and investment.

To contribute positively towards the food security status of the country, the department supported 7 111 smallholder producers in various

ways, among others, the provision of technical, training and advisory services.

A total of R2,8 billion has also been allocated over the MTEF to Fetsa Tlala. The Department of Water and Sanitation has further reprioritised R502 million to deliver water, protect springs and refurbish boreholes.

The Agri-parks programme, which is aimed at increasing the participation of smallholder producers in the agricultural value chain, has been extended to 44 districts and a total of 17 projects associated with the programme are at various stages of construction.

During 2015, the department also supported 16 447 smallholder producers against an annual target of 16 000; 78 077 ha were reported to have been cultivated against an annual target of 120 000 ha and 25 207,29 ha for agricultural land and 302,65 ha of woodlands and indigenous forest were rehabilitated. A total of 2 279,79 ha of forests in KwaZulu-Natal, Eastern Cape and Limpopo were planted.

This initiative created 12 537 jobs and going forward the support to producers will be expanded through the establishment of 88 producer production support units and bringing new areas into production with commodities aligned to APAP, as well as annually putting 150 000 ha of land into productive use.

In addition, 25 000 producers will be supported focusing on commodities such as grain, fruit, vegetables and red meat. The Agri-parks programme aims to generate 100 000 jobs over the next three years.

Work on a government-led food procurement model, linked to the smallholder producers, is currently under way. This is one of the interventions by government to sustain the economic viability of this vulnerable agricultural sector.

Through this initiative, government will reprioritise its procurement on food to create markets for subsistence and smallholder producers in rural, urban and peri-urban areas.

Sector interventions to assist smallholder producers with technical, infrastructure and financial support will continue to be rolled out. These include the CASP and the Ilima/Letsema and LandCare programmes

## Regional and international cooperation and trade

### Regional cooperation

South Africa has strong and mutually dependent economic links with countries in the southern African region through the SADC and the SACU.

As contribution to the African regional

development, the DAFF continues to implement South Africa's foreign policy objectives, through the facilitation of SADC and AU engagements and implementation of the South-South Cooperation.

Agreement with emphasis on BRICS (Brazil, Russia, India, China and South Africa). The International Relations Strategy is an instrument put into place to interact with various sector stakeholders at regional and international level in support of producers to access international markets.

### Regional trade

South Africa, as a member of SACU and a signatory of the SADC Treaty, is committed to sharing its objectives with other nations in the region. SACU opened its markets to the countries of the SADC region by implementing its tariff reduction commitments under the SADC Trade Protocol.

The signatories to the SADC Trade Protocol are: Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, the Seychelles, Swaziland, Tanzania, Zambia and Zimbabwe. Angola and the Democratic Republic of the Congo are still in the process of acceding to the protocol.

The first objective of the trade protocol is to remove both tariff and non-tariff barriers to trade between SADC countries.

The SADC has set up an electronic reporting system for non-tariff barriers, in which the DAFF is involved as a contact point to receive traders' complaints.

South Africa, as part of the SACU and SADC, is in the process with negotiating with the Common Market for Southern and Eastern Africa and the East African Community for the Tripartite Free Trade Area Agreement.

### Forestry

The DAFF is the custodian of South Africa's forest resources, which cover over 40 million ha (about 36.7%) of the country's land surface area.

Although forestry contributes a modest 0,7% to the GDP, it supports manufacturing sub-sectors such as sawmilling and paper and pulp production, as well as mining and construction.

It is estimated that in 2011 there were about 63 000 jobs in commercial forestry itself and another 52 000 in direct processing jobs. Of the total land area of 122,3 million ha in South Africa, only 1% or 1,273 million ha is used for forestry.

In 2012, plantation area as a percentage of land area by province totaled 40,9% in Mpumalanga, 39,6% in KwaZulu-Natal, 11,2% in the

Eastern Cape, 4,4% in the Western Cape and 3,8% in Limpopo. The production of round wood in the same year came to 18,776 million cubic metres, while the value of sales amounted to R20.7 billion.

An analysis of the trends of commercial forestry ha planted by tree type and primary use indicates that, firstly, there has been a marked decline in both softwood and hardwood plantation ha planted since the mid-1990s and secondly, there has been a marked increase in ha for pulpwood purposes as compared to the ha for saw logs and mining timber.

Underlying these trends are various factors, but in particular the tighter regulatory framework governing water usage – forestry is regarded as a water diversion land use, therefore, permits are required to expand the area under plantations.

Other factors include the privatisation of much of what had been state forests, which has resulted in private sector lessees favouring shorter-term returns via pulpwood use over longer-term returns from saw logs, as well as the State's poor upkeep of Category B and C plantations, which has reduced their productivity.

While there is still a net surplus of sector exports over imports, the margin has narrowed by 32% since 1992 and the sector predicts that South Africa will soon become a net importer, especially of saw logs. These in turn will likely result in a significant increase in costs in the construction industry, with further implications for the property market and human settlement.

One sub-sector that has already been affected by the decline in timber supply is sawmilling, with the number of sawmills increasing from 96 to 115 between 1996 and 2004, but then declining to 90 by 2010.

While it is clear that the private sector does have good management capacity and has also ushered in efficiencies across the value chain, the State must still play a significant role to ensure adequate levels of investment, especially for longer-rotation timber/saw log plantations.

The forest products industry ranks amongst the top exporting industries in the country. Paper and paper board, wood pulp, wood and articles of wood and charcoal were the leading export products and constituted 94% of total forestry products. Total investment in forestry amounts to R25,6 billion.

Mpumalanga has the highest investment in plantations of 42% or R10,7 billion, followed by KwaZulu-Natal with R8,9 billion (35%), the Eastern Cape at R3,2 billion (12,8%), the Western Cape amounting to R1,5 billion (6%) and Limpopo at R1,1 billion (4,2%).

## Legislation

The National Forests Act, 1998 (Act 84 of 1998), and the Forestry Laws Amendment Act, 2005 (Act 35 of 2005), reflect the vision for the future of forestry in South Africa. They emphasise sustainable forest management, and explain how people and communities can use forests without destroying them. The Acts set out rules for protecting indigenous forests, and ensure that the public has reasonable access to state-forest land for recreational, cultural, spiritual and educational purposes.

South Africa is richly endowed with more than 1 700 tree and shrub species. Some are threatened, and 47 species are protected under the Act.

Protected trees may not be cut down; damaged, destroyed or possessed; collected; removed; transported; exported; purchased; sold; donated or in any other way acquired or disposed of except under a licence granted by the Minister or in terms of an exemption. In terms of the National Forests Act of 1998, all natural forests are protected. In 2014, the National Forest Act of 1998 was amended to ensure ease of implementation.

The National Veld and Forest Fire Act (NVFFA), 1998 (Act 101 of 1998), and the National Veld and Forest Fire Laws Amendment, 2001 (Act 12 of 2001), are the primary legislation regulating veldfire management in the country.

The purpose of these Acts is to prevent and combat veld, forest and mountain fires. The legislation provides a variety of institutions, methods and practices for achieving the purpose. The Acts place an individual duty on every landowner where there is a risk of fire to take certain minimum precautions to prevent and combat fires. It also introduces the concept of voluntary FPAs, which may be formed by landowners for purposes of veldfire management in a specific area.

## Role-players National Forest Advisory Council (NFAC)

The NFAC advises the Minister of Agriculture, Forestry and Fisheries on all aspects of forestry in the country.

The NFAC is actively involved in developing local criteria, indicators and standards for sustainable forest management, and makes recommendations on how public access to state-owned forests may be improved.



## South African Forestry Company Limited (SAFCOL)

SAFCOL is government's forestry company, conducting timber harvesting, timber processing and related activities, both domestically and internationally.

Through its operations, it employs about 5 000 people through direct and indirect employment and by extension, are responsible for about 20 000 lives in communities adjacent to its operations.

It subscribes to the Forest Sector Charter and plays a leading role in transformation within the industry. With the focus on communities adjacent to its plantations and specifically the youth in those communities, it makes a difference in the physical circumstances and networking in the communities.

The structured approach of community partnerships was strengthened, with the focus on implementing needs-driven development and making a positive impact in community members' lives.

Of special note is the launch of the SAFCOL-sponsored Forestry Chair at the University of Pretoria, which is an opportunity for students who wish to further their studies in forestry-related fields.

### Research and training

South Africa has world-class forestry research infrastructure and personnel, with almost 2% of the forestry industry's turnover (private and public sectors) devoted to research. The forest research function within the department has been coordinating a number of research projects focusing on sustainable management of forest resources. These include:

- the monitoring and evaluation of bark-harvesting techniques used for two indigenous tree species in the Letaba State Forest
- sustainable harvesting of plants used for medicinal purposes
- the sustainable use of monkey rope (*Secamone alpini*) by local subsistence farmers
- ex situ and in situ conservation of the critically endangered *Protea roupelliae* sbsp. *hamiltonii*
- conservation of the co-occurring endangered *Leucospermum gerrardii* within the Dr Hamilton Nature Reserve.

The major institutes servicing the research needs of the industry are the Institute of Commercial Forestry Research in Pietermaritzburg, the Forestry and Agriculture Biotechnology Institute, and the Council for Scientific and Industrial Research in Pretoria. The South African National

Biodiversity Institute also plays an important role, in terms of species protection.

The faculties of agricultural and forestry sciences at the universities of Stellenbosch, KwaZulu-Natal and Venda offer forestry degrees. The Nelson Mandela Metropolitan University (George Saasveld Campus) offers diplomas and limited degree courses in forestry disciplines.

The Natal University of Technology offers a diploma in Pulp and Paper Technology, and the Fort Cox College of Agriculture and Forestry offers a diploma in Social Forestry.

Skills training is provided by a number of industry-sponsored and in-house training centres. Industry-sponsored bursaries are available, as are company-sponsored bursaries for study at these institutions.

The Fibre Processing and Manufacturing (FPM) Sector Education and Training Authority (Seta), is responsible for ensuring that the training undertaken by the industry meets certain quality standards.

The department, together with the FPM Seta, offers study bursaries in forestry-related fields.

## Programmes and initiatives

### Participative forestry

The department supports the establishment of community projects through regional forestry staff. An estimated R2 million has already been spent from the Community Facilitation Fund to support the establishment of projects on the ground. Projects include the establishment of medicinal plant nurseries, in partnership with various stakeholders, and beekeeping, in partnership with the ARC.

In addition to producing honey, beekeepers play a critical role in agriculture, contributing to crop pollination and the development of products worth billions of rand.

The honey industry in South Africa has an average annual turnover of R3,2 billion and produces some 2 000 t a year. Government investment in KwaZulu-Natal aims to increase national production to 100 000 t and employ over 100 000 people.

### National Arbor Week

South Africa celebrates Arbor Week from 1-7 September annually. The DAFF, as the custodian of forestry in South Africa, is responsible for the campaign.

Arbor Week in 2015 was celebrated under the theme: 'Forests and People: Investing in a sustainable future'. The campaign in 2015 was used as a build-up towards the 14th World Forestry Congress that took place from 7 to

11 September 2015 at the Inkosi Albert Luthuli International Convention Centre in Durban.

The congress aims to highlight the value of forests with regard to sustainable livelihoods, environmental conservation and development in general. Since September is also Heritage Month, the department also focused on the country's champion trees which include some of the oldest, largest and culturally significant trees.

National Arbor Week is an opportune time to urge all South Africans to plant indigenous trees as a practical and symbolic gesture of sustainable environmental management.

The primary purpose of the campaign is to spread and herald the importance of protection, conservation and preservation of the country's green heritage, namely forests, indigenous trees and related green resources. The secondary aim is to educate, change attitudes and modify the general behaviour of the South African public in a way and a manner they perceive and relate to the green heritage.

Greening refers to an integrated approach to the planting, care and management of all vegetation in urban and rural areas, to secure multiple benefits for communities.

Greening in the South African context takes place in towns, townships and informal settlements, specifically because in the past the latter mentioned areas were disadvantaged in terms of planning for parks as well as tree planting in streets and open spaces.

In order to promote greening, especially the planting of indigenous trees whose occurrence has become scarce, the concept of the trees of the year was born some years ago. Previously there were two selected trees of the year comprising a rare and common species. However, at times there are three trees of the year. For the 2015 campaign, the trees of the year were:

- Forest bushwillow (*Combretum krausii*). This tree has been selected from the list of common species. It is handsome, quick growing and reasonably cold resistant. It is recommended for shady areas in gardens with a mild to warm climate. Found from the coast to the midlands in the eastern regions of South Africa and neighbouring Swaziland. The habitat ranges from rocky hillsides at altitudes from almost sea level up to 1 200 m. It grows anywhere from evergreen forest or forest margins to dense woodland.
- Parsley tree (*Heteromorpha arborescens*). This tree has been selected from the list of rare species. This small to medium-sized, deciduous tree or straggly shrub is suitable for a small maintenance-free garden. It occurs

in wooded grassland, bushveld and on forest margins. It is fairly widespread in the eastern regions of South Africa, from the southern Cape up through Eastern Cape and eastern Free State, KwaZulu-Natal, Swaziland into Gauteng, Mpumalanga and Limpopo. It also occurs further north in Africa.

### Champion Tree Project

The purpose of the Champion Tree Project is to identify and protect trees that are of national importance and worthy of special protection, due to their remarkable size, age, aesthetic, cultural, historic or tourism value. Similar projects have been established in several other countries, but this is the first of its kind in Africa.

Nomination forms with guidelines for the nomination process are available from the DAFF.

Every nomination cycle starts on 1 August each year, and ends on 31 July the following year.

Seventy five trees and groups of trees had been declared by the department as Champion Trees, based on criteria such as size, age and historical value. More trees were shortlisted and declared during 2015. These trees are all protected under the National Forests Act of 1998. They include the Tsitsikamma Big Tree along the Garden Route, the Post Office milkwood tree of Mossel Bay, the Sagole baobab in Limpopo and camphor trees planted at Vergelegen Estate in the Western Cape three centuries ago.

The oldest planted tree in South Africa is a saffron pear, brought from the Netherlands and planted in the Dutch East India Company's gardens in Cape Town more than three centuries ago, supposedly by Jan van Riebeeck. Historic trees include a poplar tree, which served as a landmark for refugees during the apartheid regime who found a safe haven in the Johannesburg house of Ruth Fischer, the daughter of Bram Fischer, who was a founding member of the South African Communist Party.

A group of international and local tree climbers has visited and climbed the champion trees around the country, contributing to more accurate height measurements, and installing nesting boxes for the rare Cape parrot in some of the large champion trees that occur in natural forests.

All the trees were also visited by a professional photographer, to create a proper photographic record of the trees, which will also be used for the publication of a book on the champion trees within a year.

## Million Trees Programme

The Million Trees Programme was launched in 2007 as part of a UN greening initiative to encourage countries worldwide to plant more trees. Its purpose is to ensure that at least one million trees, including fruit trees and indigenous ornamental shade trees, are planted every year.

In South Africa, the Million Trees Programme is a partnership between the three spheres of government, non-governmental and community-based organisations, schools and the corporate sector.

It is part of the South African contribution to the United Nations Environment Programme "Plant for the Planet: Billion Tree Campaign", where communities, industry, civil society organisations and governments are encouraged to plant at least one billion trees worldwide.

## Resources Sustainable forest management

Broadly speaking, there are three categories of forests in South Africa, namely indigenous forests, woodlands and plantation forests. Forestry activities in indigenous forests and woodlands are not limited to the protection of the resource as a natural heritage, but include its development, use and management, as well as the management and processing of non-timber forest products.

Plantation forestry practices include, among other things, the establishment of vast areas of land with exotic tree species that are harvested and processed into pulp for the paper and packaging industries; sawn timber for the production of structural and industrial timber used in the construction industry; poles for telephone and electricity supply; mining timber for use as underground support structures in primarily the gold and platinum mining sectors. The balance of other timber produced is used for a variety of other products such as charcoal and match manufacture.

Although large forestry companies do not own all the certified forests, having their own specialist environmental departments has helped the rapid expansion of certification, as they ensure that land is managed according to their own stringent environmental codes of practice.

To promote transparency, members of the public are invited to join company staff when regular audits are conducted.

There has been an increase in the number of non-corporate growers who have become certified. This may be attributed to factors such as the FSC's acceptance of group-certification schemes and the availability of local FSC

auditors, both of which have reduced the cost of certification considerably.

The introduction of small, low-intensity managed forest audits enables small and community forestry schemes to be FSC-certified.

## Indigenous forests

Only about 0,5% of South Africa's total land area is covered by natural forests. About half of the more than 1 700 indigenous tree and shrub species, representing some 530 000 ha of dense growth, grow along the south and east coasts and on the southern and south-eastern slopes of inland mountains. The other half is spread over the interior plateaux in isolated valleys and ravines.

A number of these natural forest regions, such as the Tsitsikamma National Park, are important tourist attractions.

The large Afro-temperate forests of the southern Cape, although distributed close to the coast, are aligned with the inland forest types of the Eastern Cape, KwaZulu-Natal, Mpumalanga and Limpopo. This is because the southerly temperate latitudes compensate for the altitude of inland forests.

Almost half of all natural forests in South Africa are found on private property or land under communal tenure. A detailed inventory of natural forests helps government to monitor changes in forest areas.

Although the country's low natural forest coverage has led to the development of the commercial forestry sector over the last 100 years, natural forests have continued playing a major role in the livelihoods and well-being of many rural communities. The use of natural forests as sources of building material, fuel wood, food and medicine is increasing, with an estimated 80% of South Africa's population still using medicinal plants, most of which are sourced from natural forests.

The forest-type classification for natural forests represents 24 broad forest types. The Natural Forests Protected Areas System guides the setting aside and demarcation of natural forests as protected areas.

Systematic timber harvesting occurs in certain areas of southern Cape forests and on a smaller scale, in the Amathole forests in the Eastern Cape. This sustainable harvesting system concentrates on the removal of small quantities of senile trees dying off within the forest. On average, 3 750 m<sup>3</sup> of round logs are harvested annually (150 m<sup>3</sup> of stinkwood, 750 m<sup>3</sup> of yellowwood, 2 500 m<sup>3</sup> of Australian Blackwood and 350 m<sup>3</sup> of other species).

The seven-week fern (*Rumohra adiantiformis*), harvested in the Knysna and Tsitsikamma forests, is another valuable product of indigenous forests. The South African market for this fern is considerable and reaches its peak in September, when sales have been known to exceed 420 000 bunches.

### Woodlands

The woodlands, also known as savannahs, constitute a forest resource of major importance in South Africa. It is the most accessible forest resource for poor communities and contributes in the region of R2 000 to R5 000 to poor households annually. Natural forests cover less than one million ha of land in total, plantation forestry covers less than 1,3 million ha and the woodlands collectively cover about 29 million ha to 46 million ha.

The cover includes extensive areas in the low-lying, drier areas of Limpopo, KwaZulu-Natal and Mpumalanga. Rich biodiversity is found in savannah woodland comprising 5 900 plants, 540 bird species and 175 mammals. These include iconic species such as the Big Five group of mammals that are important to the tourism industry. Several protected tree species of the savannah, such as camel thorn and Leadwood, contribute substantially to the lucrative braai wood market, and guidelines have been set for licensing processes to assist with the control of their use.

Kathu Forest in the Northern Cape is the first woodland area to be declared protected woodland under the National Forests Act of 1998.

In the past, this resource was not really recognised as a forestry responsibility, except where some woodland occurred on State-forest land in conservation areas. However, the National Forestry Action Programme of 1997 identified woodland management as a key area of operation for forestry.

The New Forests Act of 1998 also includes woodland in its definition of forests and mandates monitoring and reporting on the state of the woodlands. This legislation protects woodlands on private and communal land, as well as in state forests, while promoting sustainable use.

Savannah woodlands are the most extensive vegetation type in southern Africa and dominate Africa as a whole. Globally, woodlands cover between an eighth and a sixth of the Earth's land surface.

The woodlands are a valuable source of fuel, building material, craft timber and a variety of non-timber products. These include fruit,

fodder, medicinal compounds, honey, meat and mushrooms. They form the backbone of the livelihoods of millions of people. The annual marula-fruit (*Sclerocarya birrea*) harvest, for example, is worth some R1,1 billion a year to rural communities.

There are 87 savannah woodland types, and although the biome as a whole is fairly well protected in formal and private reserves, many under-protected savannah types have been identified.

Another woodland type is the Albany thicket biome, characterised by dense growth of woody and succulent plant species. There are 13 thicket types, which together cover about three million ha. Extensive Spekboom plantings are underway in the Eastern Cape to restore the carrying capacity of degraded thicket areas, and to capitalise on the high carbon sequestration rates of this species as a climate change offset.

### Commercial forests

Commercial forest plantations predominantly meet South Africa's demand for wood. During the 1930s, government started extensive commercial plantations to make South Africa self-sufficient in its timber requirements, and to provide more job opportunities.

Commercial plantations of exotic species proved to be a sound investment and the private sector established large plantations of pine, eucalyptus and wattle. South Africa's plantation forests cover about 1% of the combined cultivated (arable) and grazing land.

The commercial forestry industry in South Africa is committed to practising sustainable forest management and is a world leader in forest certification. Stringent environmental codes of practice are implemented in all plantation and processing activities.

The Institute for Commercial Forestry Research (ICFR) completed its role in developing the National Forest Protection Strategy for the DAFF, a project funded by the FAO of the UN.

Another development which will assist in enhancing forest protection is the MoU, formalising FSA's support and funding for these activities at the Forestry and Agriculture Biotechnical Institute (Fabi), which has been entered into with the University of Pretoria.

The FAO and DAFF approved the National Forest Protection Strategy, which includes forest-fire related matters. Once fully implemented, the strategy is expected to provide the industry with additional resources and enhance the coordination of responses to combat forest fires.

## Plantation yields

Sappi Forests supplies over 78% of the wood requirements of Sappi Southern Africa from both its own and committed commercial timber plantations of 492 000 ha. This equates to approximately 30 Mt of standing timber.

The Lomati Sawmill produces 102 000 m<sup>3</sup> per year of sawn timber for the construction and furniture manufacturing industry.

All wood grown on Sappi-owned land and a large proportion grown on plantations managed by us, is Forest Stewardship Council® (FSC®) and ISO 9000 certified.

Approximately 140 000 ha of land is set aside and maintained by Sappi Forests to conserve the natural habitat and biodiversity found there, including indigenous forests and wetlands.

Sappi has identified investment in low-cost wood as both a growth driver and a strategic resource in order to supply its operations and to secure its margins in competitive commodity markets, such as dissolving wood pulp.

To this end, Sappi continues to work with local government and communities to accelerate afforestation in KwaZulu-Natal and the northern region of the Eastern Cape.

This development not only provides one of the only sources of income and jobs to these local communities, but will also secure valuable hardwood timber resources close to the Saiccor Mill in KwaZulu-Natal.

In addition to Sappi's own plantation area, the company continues to identify ways to ensure access to pulpwood in the wood baskets close to its key operations, by means of land or timber delivery swaps.

The plantation industry in South Africa faces an increasing threat from pests and diseases. Sappi Forests, a leader in research and development, continues to mitigate these risks through improved site species matching, the deployment of improved genetic planting stock and the introduction of specific hybrids from its conventional breeding programmes.

The construction of the state-of-the-art Clan Nursery, with a capacity of 17 million cuttings (vegetatively propagated plants), and the upgrade of the Ngodwana Nursery, provides Sappi Forests with the required facilities to rapidly deploy the improved genetic planting stock to mitigate these threats.

## Socio-economic reform and growth

The forestry vision states that forests are managed for people and that there is a need to create an enabling environment for economic

and social development through sustainable forestry, especially at local level.

Forestry strategies to achieve this vision include forestry enterprise development, aimed at creating opportunities for people to use forests including indigenous forests, woodlands and plantations, and forest-based resources for economic growth, income-generation and job creation.

The forestry enterprise development concept is central to government's pro-poor agenda and also a key component of Broad-Based Black Economic Empowerment (BBBEE) in the forestry sector.

## BBBEE Charter

The BBBEE Charter process is one of many government strategies aimed at transforming the economy. The formulation and implementation of BEE programmes at different levels and in different sectors of the economy include partnerships between government and the private sector, including trade unions and community-based organisations.

The BBBEE Charter for the forestry sector will be instrumental in achieving objectives such as increasing the number of black people, particularly women, who own, manage and control enterprises and productive assets; and facilitating ownership and management of enterprise and productive assets by communities, workers, cooperatives and other collective enterprises.

Under the charter, government aims to process about 15 000 ha of water-use licence applications a year for the next 10 years to obtain a nett increase in afforested land of about 10 000 ha a year or 100 000 ha over the entire period.

## Community forestry

Community forestry is designed and applied to meet local social, household and environmental needs and to benefit local economic development.

Community forestry is implemented by communities or with the participation of communities, and includes tree-centred projects in urban and rural areas, woodlots, and woodland being managed by communities and individuals.

Community forestry has gained impetus through more focused core functions, particularly in urban greening and forest enterprise development.

Participatory forest management of the DAFF is an integrated approach that contributes to achieving the sustainable management of South African forests.

Elements of participatory forest management

were initially developed for indigenous state forests.

However, the aim is to use participatory forest management as an approach to managing all forest types, where feasible (indigenous forests, plantations, woodlots and woodlands and where different types of ownership and management (State, provincial, communal, private and community) exist.

Ninety-six community-stream flow-reduction activity applications, totalling about 13 000 ha, were supported by the departments of agriculture, forestry and fisheries and trade and industry through assistance provided in the undertaking of environmental impact assessments in the Eastern Cape.

### **Food and Trees for Africa (FTFA)**

The FTFA is the sub-Saharan African partner of Global ReLeaf, an international greening organisation.

The FTFA's mission is to contribute to healthier living, especially in disadvantaged communities, through environmental awareness and greening programmes.

The FTFA was started in 1990 to address sustainable development through greening, climate change action, sustainable natural resource management and food-security programmes.

The FTFA works in partnership with government, the private and public sectors and civil society. Its goal is to provide trees to as many underserved communities as possible, with the help of sponsors and certificate programmes.

The FTFA; the departments of water affairs and of agriculture, forestry and fisheries; and the Institute of Environment and Recreation Management, manage the Urban Greening Fund.

It is a collective fund that supports partnerships aimed at sustainable development through tree planting, parks, food-gardening projects and environmental education.

Organisations, companies and individuals can contribute to the fund to help disadvantaged South Africans create a greener, healthier and more secure life.

### **Fisheries**

The DAFF is tasked with managing the development and sustainable use of marine and coastal resources; maximising the economic potential of the fisheries sector; and protecting the integrity and quality of the country's marine and coastal ecosystems.

The South African coastline covers more than 3 000 km, linking the east and west coasts of

Africa. These shores are particularly rich in biodiversity, with some 10 000 species of marine plants and animals recorded.

The productive waters of the West Coast support a variety of commercially exploited marine life, including hake, anchovy, sardine, horse mackerel, tuna, snoek, rock lobster and abalone.

On the east coast, squid, linefish and a wide range of intertidal resources provide an important source of food and livelihood for coastal communities.

Marine life that is not harvested, such as whales, dolphins and seabirds, is increasingly recognised as a valuable resource for nature-based tourism.

The main challenge in fisheries is to create a balance between maximising the social and economic potential of the fisheries industry; protecting the integrity and quality of the country's marine and coastal ecosystems and addressing transformation in the sector.

In line with international trends, the department recognises fisheries as an economic activity rather than a purely environmental or biodiversity matter.

Government has expanded the mandate for fisheries management by adding fresh water and inland fisheries, as well as aquaculture, to the department's existing responsibilities.

The department will gradually establish offices of the fisheries branch in coastal, as well as inland provinces. These are economic decisions, which contribute to employment creation and poverty alleviation.

The fisheries sector contributes roughly 0,1% to the GDP, which is small even by the standards of agriculture. However, it is more important for economic development in the Western Cape where 11 of the 13 proclaimed fishing harbours are situated. These contribute more the 5% to Gross Provincial Domestic Product.

The total output is estimated at 600 000 t worth about R6 billion, depending on the Pelagic catch of pilchards and anchovy, which could be as much as 600 000 t.

It is estimated that the direct employment in the industry constitutes approximately 27 000 jobs (16 000 in the primary sector and 11 000 in the secondary and tertiary sectors), while an additional 81 000 people are indirectly (net building, bait preparing, etc.) employed in industries that are at least partially dependent on the fishing sector (figures based on industry estimates and the Total Allowable Catch and Total Allowable Effort, calculated as a function of tonnage).

Fisheries output is determined by catch volumes, which in turn depends on the health and management of fish stocks, varying according to ecological changes and subjected to overexploitation through illegal, unreported and unregulated fishing activities.

Inshore species are especially vulnerable to stock depletion, as they are easily accessed, especially illegally. According to one study, 68% of commercial line fish stocks have collapsed and another 11% are overexploited.

The DAFF seeks to prevent overexploitation by means of assigning Total Allowable Catch and/or Total Allowable Effort per species, which are adjusted regularly depending on the estimated state of the resource. The DAFF has also sought to promote transformation in the sector through inclusion of small-scale fishing communities. The amended Marine Living Resources Act will grant small-scale fishing communities better access to fishing rights and resources.

The effective management of the existing 12 harbours and proclamation of additional new harbours will support resource management. Although wild catch fisheries appear unlikely to expand beyond their present levels, aquaculture is becoming more important as a substitute for wild capture fisheries.

While the marine-based “mariculture” part of aquaculture has been around for some years, focusing on species such as abalone, oysters and mussels, freshwater aquaculture is experiencing a rapid expansion, owing in part to government’s multipronged aquaculture promotion campaign.

Aquaculture has been included in the Oceans Economy Operation Phakisa. Globally, wild fish stocks have been dwindling, growing at a modest 1% per annum, while aquaculture has grown by 7% and accounts for 44% of the global fish production. Therefore, aquaculture is seen as a quick win for growing the oceans economy.

Through Operation Phakisa and the detailed plans on the development of 24 marine and inland aquaculture projects, which are being implemented, the expectation is to increase production from the current 4 000 t to 20 000 t per year, increase the current value of aquaculture from R400 million to R6 billion and create up to 210 000 sector jobs by 2030.

Aquaculture is an important element of the Ocean’s Economy Strategy, Operation Phakisa. It is anticipated that Operation Phakisa will place marine resources in a central position in the economy. Through Operation Phakisa, government plans to grow the sector value from its current R400 million to R6 billion, with a possible job creation of up to 210 000 jobs in this

sector by 2030.

The WfFP will remain one of the vehicles for economic growth and sustainable livelihoods for fishing communities. Plans include focusing on ensuring that the commercial Fishing Rights Allocation Process 2015/16 reflects the commitment of government and the industry to transform the sector.

To further transform this sector, the implementation of the Small-scale Fisheries Policy will contribute towards equitable participation of coastal and fishing communities and ensure that they gain access to marine resources.

## Industry and products

South Africa is among the global fishing nations that have identified the challenges within their fishing industry. With 22 commercial fisheries sectors and new fisheries being explored and experimented with, South Africa has two fisheries sector components.

Wild capture fisheries include three distinct components, namely commercial, recreational and subsistence fisheries, each of which requires specific research and management interventions.

The aquaculture (fish farming) sector is considered underdeveloped and as a result, has been prioritised, owing to declining wild stocks.

## Legislation and policies

- The Small-scale Fisheries Policy seeks to address imbalances of the past and ensure that small-scale fishers are accommodated and properly managed. For the first time, fishing rights will be allocated on a group, rather than an individual basis. The policy further aims to support investment in community entities to take joint responsibility for sustainably managing the fisheries resources and to address the depletion of critical fisheries stocks.
- The department has entered into a service level agreement with the South African Navy to manage its fleet of four patrol vessels and three research vessels for a year, while the department considers its various options regarding the long-term management of these vessels.

## Resource management

The department increased its capacity to combat illegal, unregulated and unreported fishing, and launched an anti-poaching project in the Western Cape, funded through the WfFP.

This enabled the department to deploy 60 military veterans in the Overberg region to serve

as the “eyes and ears” of government.

The fishing sector comprises large-scale operators and small-scale and recreational fishermen and women.

According to a recent UN report, more than two-thirds of the world's fisheries have been overfished or are fully harvested, and more than one third is in a state of decline, owing to the loss of fish habitats, soaring pollution levels in oceans and rivers and climate change.

According to the report, abalone stocks remain in a depleted to heavily depleted state as the resources continue to decline, due to increasing levels of poaching and ecological factors.

Meanwhile, line fish resources range from heavily depleted to optimal states, depending on species.

There are, however, signs of a positive response by some species to the emergency management measures implemented in 2000.

Given the low population sizes of many line fish species, however, present management measures are expected to assist in allowing stock to increase.

Under the operational management procedure, the West Coast rock lobster is showing signs of recovery.

Deep-water hake remains depleted, however, its status is improving, whereas shallow-water hake is considered optimal to abundant.

The implementation of precautionary management approaches to hake fisheries in recent years has resulted in a faster than anticipated recovery of deep-water hake.

Harders, which are the main target of the beach-seine and gillnet fisheries, remain in a depleted to heavily depleted state.

Environmental anomalies and illegal netting have affected the recruitment of the species in recent years.

The abundance of Agulhas sole has remained relatively constant over the past 15 years, while Cape horse mackerel has increased in abundance in recent years, due to good recruitment, and the stock is considered to be in an optimal state.

The anchovy stock is at the lowest level observed in the past 15 years, but sardine and round herring stocks continue to increase.

In South Africa, the fisheries sector is worth around R6 billion per annum and directly employs some 27 000 people in the commercial sector. Thousands more and their families depend on these resources for food and the basic needs of life.

The total allowable catch apportioned for the subsistence (small-scale/interim relief)

subsector, is set at 276 t (138 kg per fisher).

The apportionment for the recreational fishing subsector remains unchanged at four West Coast rock lobsters per person per day for the duration of the fishing season.

The size restriction remains at 80 mm carapace length and recreational fishing permits will only be issued to persons above the age of 12 years. Any west coast rock lobster caught, collected or transported shall be kept in a whole state.

West coast rock lobster caught with a recreational permit may not be sold by any person.

Recreational west coast rock lobster permits are obtainable at the Post Office, at a cost of R92 per permit and are valid for the entire recreational fishing season.

The department's decision to pursue the recovery target has been welcomed by WWF and carries the unanimous support of all the WCRL user sectors.

The International Commission for the Conservation of Atlantic Tunas (ICCAT) is an RFMO that is responsible for the management of tuna and tuna-like species in the Atlantic Ocean and Mediterranean Sea.

South Africa's strategic intent with participating in the ICCAT is to ensure long-term fishing access in the Atlantic Ocean for South African fishing companies in the tuna pole fisheries and the developing large pelagic fisheries.

Access to the Atlantic Ocean is essential for encouraging future investment in the tuna/swordfish fisheries, to create the enabling environment for these fisheries to develop.

The ICCAT will benefit South Africa with management activities, including collating fisheries data, guiding research, conducting stock assessments, establishing management and conservation measures and issuing country quotas.

## Aquaculture

Aquaculture incorporates the breeding, trading or rearing of aquatic organisms in a controlled or selected aquatic environment for recreational, commercial or subsistence purposes.

Fisheries and aquaculture support the livelihoods of an estimated 540 million people. Aquaculture, is the farming of aquatic organisms and is divided into fresh-water culture and mariculture.

Species farmed in the latter include dusky kob, abalone, Pacific oysters, Mediterranean mussels and black mussels, among others. According to the National Aquaculture Strategic Framework, the sector is relatively small and government wants to create a climate in which it can grow.



Special attention will be paid to freshwater aquaculture, as it has shown growth potential.

Government will also boost investments in research, development technology, transfer and extension, as well as education and training programmes in aquaculture.

The Agriculture Development Enhancement Programme, which offers cost-sharing grants of R40-million per company aims to create more jobs in the sector. The grants will be made available for machinery, equipment, infrastructure, commercial vehicles and work boats, in pursuit of boosting competition in the industry.

Abalone fishing is severely restricted in South African waters, however, poaching is rife, as it is a lucrative trade.

Poaching has caused the decline in abalone numbers over the years. The species is highly coveted and fetches high prices, especially in the Far East.

The National Aquaculture Policy Framework was developed against the backdrop of a global aquaculture sector that has seen an increased demand for fishery products.

The policy provides a unified framework for the establishment and development of an industry that contributes towards sustainable job creation and increased investment.

In South Africa, marine and freshwater aquaculture presents a good opportunity to diversify fish production to satisfy local demand; contribute to food security, job creation, economic development and rural development; and improve export opportunities.

To fast-track the growth of the aquacultural sector an amount of R338 million in private sector investment has been committed to supplement the R106 million government investments. In the nine aquaculture farms that are already in production, 521 jobs have been created while a further 335 jobs are envisaged. These nine aquaculture farms are located in the Eastern Cape, KwaZulu-Natal, Northern Cape and the Western Cape and produce kob, oysters, abalone and trout.

The President signed into law the Amended Marine Living Resources Act on 24 February 2016. Small-scale fishing, is for the first time in the history of the country, recognised as a fishing sector. The entire legal framework is currently in place to implement the small-scale fisheries policy in the four coastal provinces.

Through the Small-scale Fisheries Policy, the fisheries sector is to be transformed by providing support to small-scale fishing communities, ensuring sufficient access to fish stocks and

providing access to long-term fishing rights, thereby changing the socio-economic profile of the sector. This policy will also generate job opportunities in fish processing establishments, promote the development of aquaculture hatcheries and fish farms and promote the establishment of ownership schemes to realise the vision of an inclusive, integrated rural economy.

Aquaculture has been given a boost through its inclusion in the Oceans Economy Operation Phakisa. Through Operation Phakisa and the detailed plans on the development of 24 marine and inland aquaculture projects, which are being implemented, we expect to increase production from the current 4 000 t to 20 000 t per year, increase the current value of the subsector from R400 million to R6 billion per year and create up to 210 000 sector jobs by 2030.

In the case of aquaculture, the DAFF is busy with the implementation of nine aquaculture projects under Phase 2 of Operation Phakisa (Developing the Ocean's Economy). The aquaculture sector has unlocked investments of more than R400 million across 10 aquaculture farms, which are already in production. The community in Hamburg in the Eastern Cape has seen its first harvest of dusky kob (kabeljou — fish) and the Siyazama Aquaculture Cooperative in Hamburg sold its first harvest of dusky kob to the Cape Town Fish Market at the V&A Waterfront.

The expansion of aquaculture projects to inland and other coastal areas in support of SMMEs will create 3 200 jobs and contribute R500 million to the GDP over the next three years. Furthermore, the draft Aquaculture Bill was by mid-2016 ready for public consultation. The DAFF has also established the Interdepartmental Authorisations Committee and the Aquaculture Development Fund. The effective management of the existing 12 harbours and proclamation of additional new harbours will support resource management. Although wild catch fisheries appear unlikely to expand beyond their present levels, aquaculture is becoming more important as a substitute for wild capture fisheries.

While the marine-based "mariculture" part of aquaculture has been around for some years, focusing on species such as abalone, oysters and mussels, freshwater aquaculture is experiencing a rapid expansion, owing in part to government's multipronged aquaculture promotion campaign.

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### **Subsistence fisheries**

Participation in subsistence fisheries is comprehensive – coastal communities have traditionally made use of intertidal and shallow-water resources as a source of food. Only surplus not consumed by fishers is sold locally.

### **Recreational fishing**

While the illegal harvesting of abalone poses the greatest threat to management objectives, the DAFF will continue to work with all stakeholders in the abalone sector and continue to strengthen partnerships with other law-enforcement agencies and communities to ensure that the country grows and protects its resources.

With South Africa's extensive coastline spanning two oceans and its numerous dams, lakes, rivers and streams, the country is a recreational fisher's paradise. However, recreational fishing may only be undertaken with a valid permit, and recreational fishing is limited to certain times of the fishing season.

To reduce user conflicts between commercial and recreational fishing, and to protect stocks during breeding periods, certain areas have been declared closed areas.

Recreational fishers are also subject to bag limits of fish on a per-day basis.

Annual recreational fishing licences in all industries total about 300 000, with income generated from these licences amounting to R18 million. The actual annual catch is about 17 000 t of high-value species.