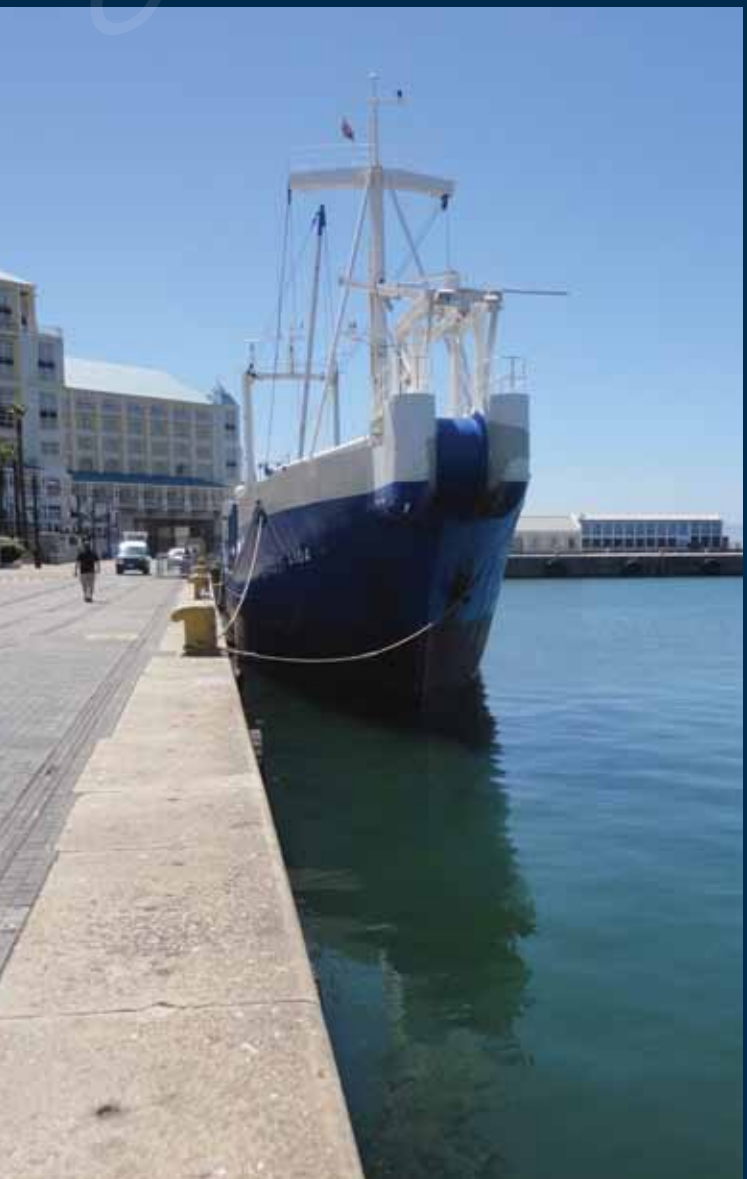


Agriculture, forestry and fisheries



SOUTH AFRICA YEARBOOK 2011/12

South Africa's dual agricultural economy comprises a well-developed commercial sector and a predominantly subsistence-oriented sector in the rural areas.

The Department of Agriculture, Forestry and Fisheries aims to lead, support and promote agricultural, forestry and fisheries resources management through policies, strategies and programmes to enhance their sustainable use, and to achieve economic growth, job creation, food security, rural development and transformation.

Legislation

In September 2011, Cabinet approved the publication of the Plant Breeders' Rights Amendment Bill, 2011 for public comment. The Bill aims to strengthen the protection of intellectual property rights related to new plant varieties.

In the same month, Cabinet approved the submission of the Fertilisers and Feed Bill, 2011 to Parliament. The Bill seeks to modernise the regulation and regulatory framework of fertilisers, animal feeds (farm feeds) and sterilising plants to support animal welfare, food safety, food security and environmental management objectives.

Cabinet also approved the amendment of the Veterinary and Para-Veterinary Act, 1982 (Act 19 of 1982), through the Veterinary and Para-Veterinary Amendment Bill, 2011. The Bill caters for, among other things, the performance of compulsory community service by newly qualified veterinarians.

Agricultural economy

About 8,5 million people depend directly or indirectly on agriculture for their employment and income.

Guided by government's New Growth Path (NGP), the agricultural sector has been identified as one of the sectors that has significant potential to create jobs. The NGP targets job opportunities for 300 000 households in agriculture smallholder schemes and a further 145 000 jobs in agro-processing, which in turn will have the potential to upgrade conditions for 660 000 farm workers by 2020.

The Department of Agriculture, Forestry and Fisheries is committed to creating 130 000 jobs in the agriculture, forestry and fisheries sectors by 2014.

In addition, it aims to establish 50 000 commercially orientated smallholder farmers, focusing on former homelands, where there is a large concentration of subsistence producers, including supporting smallholders on land acquired through land reform in partnership with the Department of Rural Development and Land Reform.

The total contribution of agriculture to the economy increased from R33 billion in 2003 to R69 billion in 2010.

About 12% of South Africa's surface area can be used for crop production. High-potential arable land comprises only 22% of total arable land. Some 1,3 million hectares (ha) are under irrigation. These comprise about 1,5% of South Africa's agricultural land.

The most important factor limiting agricultural production is the availability of water. Rainfall is distributed unevenly across the country. Almost 50% of South Africa's water is used for agricultural purposes.

The country can be subdivided into a number of farming regions according to climate, natural vegetation, soil type and the type of farming practised. Agricultural activities range from intensive crop production and mixed farming in winter-rainfall and high summer-rainfall areas, to cattle ranching in the bushveld and sheep farming in the more arid regions. Owing to its geographical location, some parts of South Africa are prone to drought.

Primary commercial agriculture contributes about 3% to South Africa's gross domestic product (GDP) and about 7% to formal employment. However, there are strong backward and forward linkages into the economy, so that the agro-industrial sector is estimated to contribute about 12% to GDP.

Despite the farming industry's declining share of GDP, it remains vital to the economy and the development and stability of the southern African region.

The estimated value of imports in 2010 was R34,6 billion, while exports totalled R46,1 billion.

Sustainable resource management and use

South Africa is able to meet its own food requirements. The Department of Agriculture, Forestry and Fisheries and the Agricultural Research Council's (ARC) 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

The South African Veterinary Association hosted the World Veterinary Congress in Cape Town, from 10 to 14 October 2011. The congress was the culmination of the 250th anniversary of the veterinary profession in South Africa.

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 Fires Information System tracks all fire outbreaks in the Southern African Development Community (SADC) region, through the use of Moderate Resolution Imaging Spectroradiometer Satellite Imagery. This information can be viewed at *afis.meraka.org.za*.

Soil degradation

Although it is generally recognised that soil degradation is a problem, little reliable data has been collected systematically over time. Soil degradation is largely related to the decline in soil organic matter.

Monoculture cereal production, intensive tillage, short-to-no 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.

In 2011, the results of a study done as part of the Land Degradation in Dryland Areas Project were released. The project's aim is to determine areas subjected to land degradation for further verification and analysis to determine the state of degradation.

It is calculated that 1,5 million ha (around 1% of the land surface) of land 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 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 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).

Gross value of agricultural production, 2010 (million)

Field crops	
Maize	13 522
Wheat	3 191
Hay	3 116
Grain sorghum	314
Sugar cane	4 825
Groundnuts	453
Tobacco	346
Sunflower seed	1 504
Soya beans	1 431
Other	1 353
Total	**30 055**
Horticulture	
Viticulture	3 474
Citrus fruit	6 455
Subtropical fruit	2 088
Deciduous and other fruit	8 757
Vegetables	7 802
Potatoes	4 775
Other	2 172
Total	**35 523**
Animal products	
Wool	1 424
Poultry and poultry products	29 598
Cattle and cattle products	15 203
Sheep and goats slaughtered	3 677
Pigs slaughtered	2 924
Milk	9 253
Other	3 442
Total	**65 521**
Grand total	**131 099**

Source: Directorate: Agricultural Statistics, Department of Agriculture, Forestry and Fisheries

In September 2011, South Africa hosted the African Ministerial Conference on Agriculture. The conference intended to share experiences and develop a common understanding of climate-smart agriculture.

The extent thereof and awareness of it have increased sharply over the last two decades. Switching to overhead and microregulation systems and the widespread effects these have on crusting-prone soils has contributed to the problem.

Human-induced soil acidification is also a major problem. Its effect is severe since it impacts on the country's scarce, arable land, especially the limited high-potential agricultural land. More than five million ha of cultivated land have already been seriously acidified, mainly due to injudicious fertiliser practices and inadequate lime applications. In the high-potential areas of Mpumalanga, opencast and strip-coal mining also cause soil acidification.

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 (GMOs)

South Africa does not have ideal conditions for crop production. Serious climatic constraints, such as periodic droughts, limit agricultural production. Genetic modification (GM) provides a way of meeting the growing demand for food without placing even greater pressure on scarce resources.

A great deal has happened in this field since the proclamation of the GMO Act, 1997 (Act 15 of 1997). 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. As such, it is recognised as being both comprehensive and well balanced.

The GMO Act, 1997, which was implemented in December 1999, provides for the regulation of GMO activities in South Africa, and states that biosafety assessments should be conducted for every proposed GMO activity. In terms of the Act, permits are issued for a specific GMO activity, such as trials for commercial release in the country. The permits may also specify conditions under which a particular activity with GMOs should take place.

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 2007, for GM maize that is resistant to certain insect species and herbicide-tolerant; and also for GM cotton that has an improved mechanism to enable herbicide tolerance.

Since the adoption of "biotech" crops in 1996, the areas planted with GM maize, soya beans and cotton in South Africa have increased to about 2,2 million ha. In 2010, white GM maize plantings totalled 1,139 million ha, representing a market share of about 80,3%; yellow maize plantings totalled 759 000 ha, representing 79,6% of the total yellow maize crop; GM soya bean plantings increased to 332 000 ha, representing 79,4% of the total soya bean crop; and GM cotton plantings totalled 12 925 ha, representing 98% of the total cotton crop.

In August 2011, the Department of Agriculture, Forestry and Fisheries invited stakeholders' comments on the draft National Policy on Organic Production.

Water use

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.

Irrigation is an important factor in the South African economy. The Department of Agriculture, Forestry and Fisheries has embarked on a process to rehabilitate the 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. The department has identified the revitalisation of irrigation schemes and development as a priority area. This will be achieved by:

- increasing the water-use efficiency of irrigation systems and future irrigated land
- revitalising underused irrigation schemes/areas based on a sustainable and area-wide planning approach
- promoting mini-scale irrigated agriculture for household and community-level food security through efficient irrigation technologies

- identifying and developing new commercial irrigation areas in cooperation with the departments of water and of environmental affairs.

Production

The total gross value of agricultural production (total production during the production season valued at the average basic prices received by producers) for 2010 was estimated at R131 099 million, compared to R131 161 million the previous year – representing a decrease of 0,5%.

The gross value of animal products, field crops and horticultural products contributed 50%, 27,1% and 22,9% respectively to the total gross value of agricultural production.

The poultry-meat industry made the largest contribution with 17,5%, followed by cattle and calves slaughtered (11,6%) and maize (10,3%).

Prices

Producer prices of agricultural products decreased on average by 1,7% from 2009 to 2010. The weighted average price of field crops dropped by 6,2%. This was mainly the result of lower prices received for summer grains, dry beans and cotton. However, prices of vegetables, fruit and viticultural products increased by 42,3%, 6,8% and 1,8% respectively.

Summer grains, dry beans and hay decreased by 18,6%, 8,9% and 1,4% respectively. Prices of sugar cane, tobacco, oilseeds and winter grains increased by 15,1%, 10,9%, 3,6% and 1,4% respectively.

The weighted average price of animal products was 0,2% lower in 2010 than in 2009. Prices received for poultry and dairy products decreased by 4,1% and 1,5% respectively, while the average price of pastoral products and slaughtered stock increased by 21,6% and 4,1% respectively.

Demand for meat remained strong and meat prices increased between 8% and 15%. Whereas lamb prices are expected to rise constantly over the 2012 to 2013 period, beef, pork and chicken prices are expected to follow the typical cyclical trend that is largely influenced by feed prices.

The prices of milk and most dairy products decreased in 2010 due to the surplus production of raw milk in 2009 and a slump in international dairy prices. Over the long term, the use of milk is still projected to remain above its production, which implies that South Africa will remain a net importer of dairy products.

Farm income

The gross income of producers (the value of sales and production for other uses, plus the value of changes in inventories) for the year ended 31 December 2010 amounted to R128 587 million, compared with R129 071 million in 2009 – a decrease of 0,4%.

Gross income from field crops decreased by 14,1%, from R32 168 million in 2009 to R27 617 million in 2010. This was mainly a result of decreased income from maize, wheat and sunflower seed by 18,1%, 45,1%, and 36,7% respectively. These decreases were the result of both a drop in production and lower prices received by farmers.

Gross income from horticultural products increased by 4,4% to R35 449 million in 2010. Income from vegetables decreased by 11,1% or R135 million, from R12 712 million to R12 577 million in 2010.

Income from potatoes, which contributed 38% to the gross income from vegetables, decreased by 9,5%, from R5 217 million in 2009 to R4 775 million in 2010. Income from deciduous and other summer fruit decreased by 2,1%, from R8 943 million to R8 757 million. Income from citrus fruit increased by 40,4%, from R4 598 million to R6 455 million. Income from subtropical fruit increased by 1,8% or R38 million, and amounted to R2 088 million.

Gross income from animal products was 4,1% higher in 2010 than in 2009 and amounted to R65 521 million, compared to R62 957 million. Red-meat producers earned R15 203 million from slaughtered cattle and calves – representing an increase of 17,6% compared with R12 931 million in 2009. The price that farmers received for beef rose on average by 3,1%, while the number of cattle slaughtered dropped slightly. Income from slaughtered sheep rose by 10,9%, from R3 220 million to R3 571 million. Income from poultry-meat production decreased by 1,1%, from R23 200 million to R22 940 million. Income from milk increased by 0,5%, from R9 204 million in 2009 to R9 253 million in 2010. Income from wool also increased by 4%, from R1 287 million to R1 424 million.

Net farm income (after the deduction of all production expenditures, excluding expenditure on fixed assets and capital goods) amounted to R34 233 million for the 12 months to 31 December 2010, which was 15,4% less than the R40 486 million of the previous 12 months.

Payments for salaries and wages, which represented 13% of total farming costs, increased by 4%, from R11 789 million to R12 261 million. Interest paid by farmers to banks and other financiers was about R5 129 million, or 5,6% of total farming cost, compared to R5 053 million paid in 2009 – showing an increase of 1,5%.

Overall vegetable production in the 2010 season reached 2 451 975 t, up 4,1% from the previous season, when 2 355 798 t were harvested.

However, despite the growth in production, vegetable consumption decreased in 2010 to 42,5 kg per capita per year (-6,3%).

Field crops and horticulture

The largest area of farmland planted with field crops is maize, followed by wheat and, to a lesser extent, sugar cane and sunflower seed. The grain industry is one of the largest in South Africa and is a very strategic one. According to the *Economic Review of South African Agriculture*, the gross income from field crops decreased by 14,1% to R27 617 million for the year ended 31 December 2009.

Maize

Maize is the largest locally produced field crop, and the most important source of carbohydrates in the SADC for animal and human consumption. South Africa is the main maize producer in the SADC, with production averaging about 9,7 million tons (Mt) a year over the past 10 years.

It is estimated that over 8 000 commercial maize producers are responsible for the majority 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. A total of 13,4 Mt of maize were produced in 2009/10 on 3,3 million ha of land (non-commercial agriculture included).

Wheat

Wheat is produced mainly in the winter-rainfall areas of the Western Cape and the eastern parts of the Free State. In 2010, 1,52 Mt were produced on 558 000 ha of land.

Malting barley

Malting barley is produced mainly on the southern coastal plains of the Western Cape. The area of barley planted totalled 83 000 ha in 2010, and production totalled 218 418 t.

Production of important field crops and horticulture products, 2010 ('000 t)

Maize	13 431
Wheat	1 967
Sugar cane	16 866
Grain sorghum	226
Soya beans	566
Sunflower seed	509
Deciduous and other soft fruit	1 826
Citrus fruit	2 167
Subtropical fruit	670
Vegetables	2 506
Potatoes	2 089

Source: Directorate: Agricultural Statistics, Department of Agriculture, Forestry and Fisheries

Groundnuts

Groundnuts are grown mainly in the Free State, North West and the Northern Cape. An area of 54 550 ha was planted in 2009/10, producing 100 000 t.

Sunflower seed

South Africa is the world's 12th-largest producer of sunflower seed, which is produced in the Free State, North West, on the Mpumalanga Highveld and in Limpopo. An area of 397 700 ha was planted in 2009/10, producing 509 000 t.

Sorghum

Sorghum is cultivated mostly in the drier parts of the summer-rainfall areas such as Mpumalanga, the Free State, Limpopo and North West. In 2009/10, an estimated 87 000 ha were planted, with production totalling 196 500 t.

Soya beans

Soya beans are produced mainly in Mpumalanga, the Free State and KwaZulu-Natal. Small quantities are produced in Limpopo, Gauteng and North West. For the 2010 production season, soya beans were planted on 311 450 ha, with production totalling 566 000 t.

Canola

Canola is an oilseed crop that is grown mainly in the Western Cape. However, since the 2001 production season, smaller quantities have also been planted in North West and Limpopo. Canola competes on the local market with other oilseeds

such as sunflower seeds and soya beans. For the 2010 production season, the canola crop was estimated at 39 650 t on an area of 34 820 ha.

Dry beans

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. In 2010, 57 000 t of dry beans were produced on 44 000 ha of land.

Sugar

The South African sugar industry is one of the world's leading cost-competitive producers of high-quality sugar. It 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, and a range of by-products.

The cane-growing sector comprises approximately 35 300 registered sugar-cane growers farming predominantly in KwaZulu-Natal, with a substantial investment in Mpumalanga and some farming operations in the Eastern Cape. Sugar is manufactured by six milling companies with 14 sugar mills operating in these cane-growing regions.

The industry produces an estimated average of 2,2 Mt of sugar per season. About 60% of this sugar is marketed in the Southern African Customs Union (Sacu). The remainder is exported to markets in Africa, Asia and the Middle East.

Deciduous fruit

Deciduous fruit is grown mainly in the Western Cape and in the Long Kloof Valley of the Eastern Cape. Smaller production areas are found along the Orange River and in the Free State, Mpumalanga and Gauteng. In 2010, South Africa produced 656 884 t of subtropical fruit, which were 642 t more than in 2009.

Wine

The 2011 overall wine grape crop size was estimated at 1 279 017 t according to the South African Wine Industry Information and Systems.

This was 1,4% more than the 2010 crop. With the exception of the Orange River, Breede Kloof and Worcester, all nine cultivation districts were expected to have bigger crops.

The 2011 crop – including juice and concentrate for non-alcoholic purposes, and wine for brandy and distilling wine – was expected to amount to 992,5 million litres, calculated at an average recovery of 776 litres per ton of grapes. This was 1% more than the 2010 wine crop.

Citrus and subtropical fruit

South Africa ranks as the world's second-largest exporter of fresh citrus fruit by volume behind Spain, and is ranked 14th in world citrus production. Despite increased competition in global markets, the country's citrus production is growing.

Citrus production is largely limited to irrigation areas and takes place in Limpopo (16 255 ha), Mpumalanga (11 681 ha), the Eastern Cape (12 923 ha), KwaZulu-Natal (4 004 ha), the Western Cape (9 524 ha) and Northern Cape (639 ha). Pineapples are grown in the Eastern Cape and in 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, and in the subtropical coastal areas of KwaZulu-Natal and the Eastern Cape.

Potatoes

The Northern Cape is one of the six largest seed-potato production areas in South Africa. North West has also started producing seed potatoes. In KwaZulu-Natal, seed-potato production centres on the Midlands. Some seed is also produced in the north, near Louwsburg, a traditionally virus-free area.

Nearly two thirds of the country's total potato crops are produced under irrigation.

Of the total crop, 50% is delivered to fresh produce markets and 19% is processed. The South African potato-processing industry has shown tremendous growth over the past five years, primarily in the crisps, chips and French fries sectors. Frozen French fries comprise 41% of all processed potato products in South Africa.

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

40% derived collectively from tomatoes, onions, green mealies and sweet corn. In 2010, the gross value of potatoes was R5 155 176. During 2010, 2 072 000 t of potatoes were produced.

Tomatoes

Tomatoes are produced countrywide, but on the largest scale in Limpopo, the Mpumalanga Lowveld and Middelveld, the Pongola area of KwaZulu-Natal, the southern parts of the Eastern Cape and the Western Cape.

In 2010, 571 000 t of tomatoes were produced. During the same year, the gross value of tomatoes was R1 555 089.

Limpopo is the main tomato-growing area in South Africa. The main production areas are Letaba (3 259 ha) around Mooketsi, and Musina (859 ha). Tomatoes are also planted in smaller areas in the Giyani, Polokwane and Mokopane districts. Total Limpopo annual production is approximately 227 990 t.

Onions

Onions are grown in Mpumalanga; in the districts of Caledon, Ceres and Worcester in the Western Cape; in Venterstad; and in the southern Free State. Onions are produced in all areas of Limpopo, with the main production areas being the Polokwane and Mokopane districts. Onions have an estimated planting area of 6 500 ha to 7 000 ha and a retail value of R200 million a year. During 2010, the gross value of onions was R1 210 635. In 2010, 518 062 t of onions were produced.

Cabbage

Cabbages are grown countrywide, but are concentrated in Mpumalanga and the Camperdown and Greytown districts of KwaZulu-Natal. South African cabbage production decreased in 2010 to 141 000 t. This decrease confirms the downward trend shown by cabbage production in the country since the 2004/05 season. During 2010, the gross value of cabbage and red cabbage production totalled R161 768. In 2010, 148 867 t of cabbages were produced.

Cotton

Cotton is cultivated in Mpumalanga, Limpopo, the Northern Cape, KwaZulu-Natal and North West. It constitutes 74% of natural fibre and 42% of all fibre processed in South Africa. Cotton is grown under irrigation as well as in dry-land conditions. Some 5 981 ha are dedicated to cotton production, with 71% under irrigation.

Tobacco

Virginia tobacco is produced mainly in Mpumalanga, Limpopo and North West. The production of Oriental tobacco ceased in 2001.

Flue-cured leaf tobacco contributes more than 80% to total production, with the number of hectares cultivated for flue-cured tobacco being about six times the land cultivated for air-cured leaf tobacco.

Honeybush and rooibos tea

Honeybush tea grows in the wetter Eastern Cape mountains and spreads down along the Langeberg and Swartberg mountains into the Western Cape towards the coast as far as Bredasdorp. It is estimated that there are approximately 30 000 ha of mountainous land, including the Tsitsikamma, Kouga, Baviaans, Langeberg and Swartberg mountain ranges, where wild honeybush grows sporadically within the greater Fynbos Biome (8 524 000 ha).

There are approximately 230 ha of honeybush tea under cultivation. The tea is harvested from the natural mountainous veld and processed at on-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 increase turnover from R10 million to R100 million. Local and international demand exceeds supply. Only 30% of honeybush tea is cultivated by less than 10 farmers, and the rest (70%) is wild harvested.

Rooibos tea is indigenous to the Cederberg area of the Western Cape, which is some 200 km north of Cape Town. Although this area remains the main centre, production has expanded to other regions. Rooibos tea is not produced anywhere else in the world and efforts to keep it this way are ongoing. In 2010, approximately 18 000 t of rooibos tea were produced.

In 2011, the South African Rooibos Council participated in an international project to improve the export competitiveness of rooibos. It was a combined effort by the council and the International Trade Centre – a joint agency of the World Trade Organisation and the United Nations (UN). Funding for the project is provided by the Netherlands.

Floriculture

The South African floriculture industry has the potential to develop into a significant international player. The total floriculture industry employs some 17 500 people. In terms of products and markets, there is a strong demand for South African floriculture worldwide. In particular, Germany, the United Kingdom, Japan and the Netherlands represent the greatest opportunities in the short term.

South Africa's indigenous flowers such as gladioli, nerines, freesias and gerberas, have undergone many years of extensive research in Europe, and have become major crops worldwide.

South Africa is the leading exporter of protea cut-flowers, which account for more than half of the proteas sold on the world market. South African proteas and so-called Cape greens (fynbos) are marketed in Europe. Production occurs mainly in the Western Cape.

Indigenous food crops

Indigenous food crops refer to crops that have their origin in South Africa or Africa. Added to these are those that were introduced into the country or in Africa long ago and are now recognised as naturalised or traditional crops. They are produced and found growing in the country under various climatic conditions with many found in the wild. Crops are divided into three categories, namely grains, vegetables and fruits.

Grain crops can be further subdivided into cereals and pulses such as millet, cowpea, sorghum, bambara groundnut, mung bean and marama bean.

The vegetables have three subdivisions, namely leafy, tuber and roots and they include cassava, amadumbe, Zulu round potato, Livingstone potato, cleome, amaranth, Jews mallow, night shade, black jack and African kale. Examples of indigenous fruits are marula, kei apple, num-num, wild medlar, wild plum, red milkwood, raisin bush and African mangosteen.

The identification of producers and processors of indigenous crops is underway in selected provinces. The aim is to identify key issues and challenges associated with production and processing and how they can be addressed. By April 2011, 16 projects had been identified in Limpopo, Mpumalanga, KwaZulu-Natal and North West. Of these, seven are processing marula, wild medlar, tsamma melon, mobola plum and moringa tree into various products (jam, jelly, juice, achar, salad dressing, powder and chutney) while nine are producing cowpea, bambara groundnut, mung bean, cassava and amadumbe.

Organic agriculture

Organic farming respects the environment's own systems for controlling pests and diseases in raising crops, and avoids the use of synthetic pesticides, herbicides and chemical fertilisers. Instead, organic farmers use a range of techniques that help sustain ecosystems and reduce pollution. According to estimates, there are some 250 farms on 45 000 ha of certified land in South Africa.

South African organic farmers grow a large variety of produce. These include various cereals, vegetables, roots and tubers, herbs and spices, fruit, nuts and rooibos tea. The largest fruit crops, in terms of hectares, are bananas, avocados and mangoes, while the largest vegetable crops are cucurbits, tomatoes, asparagus, brassicas and potatoes. Organic wine and olive oil are also produced and organic dairy farming is in its early stages in some provinces.

Livestock

Nearly 80% of agricultural land in South Africa is suitable for extensive livestock farming. Livestock are also kept in other areas, usually in combination with other farming enterprises. Numbers vary according to weather conditions.

Stockbreeders concentrate on developing breeds that are well adapted to diverse weather and environmental conditions.

The livestock sector contributes up to 49% of agricultural output in terms of value. South Africa generally produces 85% of its meat requirements, while the remaining 15% is imported from Namibia, Botswana, Swaziland, Australia, New Zealand and Europe. The livestock industry is the largest national agricultural sector.

National Livestock Development Strategy (NLDS)

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

Implementation includes establishing sector working groups, mobilising rural stock owners and keepers towards economic production, and supporting systems for the conservation of veld and livestock resources through sustainable use.

Dairy farming

Milk production in South Africa contributes approximately 0,5% to the world's milk production. There are four major dairy breeds in South Africa, namely Holstein, Jersey, Guernsey and Ayrshire. The industry comprises various economic activities with significant differences in farming methods and the processing of dairy products. These activities involve the production and marketing of raw milk, pasteurised milk and cream, fermented milk, long-life milk and cream, yoghurt, cheese and its by-products, namely whey, milk powder, sweetened and unsweetened concentrated milk, butter and butter oil (ghee).

The South African dairy industry is important to the job market, with over 4 000 milk producers employing 60 000 farm workers 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 amount 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 highly developed transport infrastructure that allows movement of cattle from one area to another, even from other countries, for example Namibia.

Mpumalanga commands the greatest share of beef production in South Africa, accounting for 23% of the beef produced in 2009, followed with the Free State and Gauteng, taking up 20% and 13% respectively. Commercial farmers own 60% of the 14,1 million cattle available in South Africa. The Brahman, indigenous Afrikaner and Nguni, Tuli, Boron, and the locally developed Bonsmara, Drakensberger, Simbra, Beefmaster and Braford are popular beef breeds.

Small stock (sheep and goat) farming

Sheep farming is concentrated mainly in the arid and extensive grazing areas of the country. In 2011, most of the estimated 28,8 million sheep in South Africa were found in the Eastern Cape, followed by the Northern Cape, Free State, Western Cape and Mpumalanga. Most sheep are woolled or dual-purpose sheep.

There are approximately 8 000 commercial sheep farms and about 5 800 communal farmers.

The sheep breed with the highest wool production per head in South Africa is the South African Merino, followed by other dual-purpose Merino breeds, of which the Dohne Merino, South African Mutton Merino, the Afrino and Letelle are the most popular. Dual-purpose breeds are bred with the specific aim of maximising wool and mutton income. These breeds have better body conformation than the Merino, but produce slightly less wool per kilogram of body weight.

Average Merino fleece weights vary from 4 kg to 5 kg a year in the semi-arid regions, and up to 8 kg a year from sheep grazing on cultivated pastures.

Mutton sheep are found mostly in the semi-desert areas of the Northern and Western Cape.

The most popular mutton breed is the locally developed Dorper. Limited numbers of indigenous fat-tailed and Karakul sheep are still found.

A large proportion of the goats in South Africa occur in communal grazing areas. The Eastern Cape has the largest number of goats (37%), followed by Limpopo (21%).

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

Poultry and pig farming

The South African pork industry is relatively large in terms of the overall South African agricultural sector. It contributes about 2,15% to the primary agricultural sector. The gross value of pork production is dependent on the quantity produced and the price received by farmers. The trend in gross value follows a pattern of prices since the industry is characterised by volatile prices. The average gross value of pork over the past 10 years amounted to R1 592 million.

The predominant pig breeds are the South African Landrace, the Large White, Duroc and the Pietrain. Some 2,5 million pigs were slaughtered between July 2009 and June 2010.

Broiler production, especially broiler meat production, was the largest segment of South African agriculture at 24% in 2009 while all animal products in South Africa contributed 48%. The farm income from broiler meat for 2009 was R23 165 billion.

Game ranching

The National Game-Farming Working Group consists of all relevant stakeholders in the game-farming industry to ensure that all parties concerned are represented and participate fully.

Game ranching in South Africa is one of the fastest-growing sectors of the agricultural industry.

Since the 1970s, there has been a huge shift from cattle farming to game ranching. Provided they observe approved game-fencing rules, registered game ranches have permission to hunt throughout the year.

There are approximately 15 000 farms in South Africa on which game freely occur. On about 8 000 game-fenced ranches, some form of income-generating commercial game ranching is practised, earning some R767 million.

The total surface area on which game is kept in South Africa amounts to more than 21 million ha of which 15 million ha of this land under wildlife are in the hands of the private sector, with the rest belonging to government institutions such as national parks and nature reserves.

Approximately 200 000 local hunters use game on game ranches and conservation areas and earn a further income of approximately R113 million annually from an estimated 5 000 foreign trophy hunters.

The total local market in live game trade is estimated at R100 million annually. Marketing of venison in South Africa is estimated at R20 million annually, but a large potential for growth is envisaged, also for venison exports.

The game industry generates about R1 073 million annually, which amounts to 2,3% of the South African agricultural sector's contribution to the country's GDP.

Game ranches in South Africa supply work for approximately 56 000 people, paying salaries of about R410 million annually.

In terms of game ranching, game is considered to be an agricultural product as defined in the Marketing of Agricultural Products Act, 1996 (Act 47 of 1996).

The Directorate: Animal Production of the Department of Agriculture, Forestry and Fisheries has, as its primary objective, the sustainable management, use and ecological protection of range and forage resources, as used by both livestock- and wildlife (game)-production systems, across provincial boundaries.

The National Game-Farming Policy aims to:

- support the effective management of viable game-farming systems
- ensure the sustainable management of natural resources
- facilitate the development of norms and standards for sustainable game farming
- promote and support equitable access to health management
- establish a national game-farm and animal database
- facilitate promotion and marketing
- deal with relevant food-safety issues
- promote research, training and support services.

Beekeeping

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. 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.

Veterinary services

The State Veterinary Services constantly guards against the introduction of animal diseases from outside South Africa. Existing animal diseases, which may be detrimental to South Africa's economy and to human and animal health, are also monitored, controlled and combated.

Livestock in the high-risk areas are inspected at frequent intervals.

Legislation provides the necessary powers to control diseases such as foot-and-mouth disease (FMD), swine fever, rabies and anthrax. South Africa, excluding the Kruger National Park and surrounding game reserves, is recognised as an FMD-free zone by the *Office International des Épizooties* (OIE).

Animal-disease control is an important factor in ensuring the productivity of the livestock sector and in promoting international trade in agricultural products.

Onderstepoort Biological Products (OBP)

OBP is a state-owned public company established in terms of the OBP Act, 1999 (Act 10 of 1999),

with the capacity and technology to produce veterinary vaccines and related biological products for local and international markets. OBP is the sole or main producer of a number of vaccines against animal tropical diseases with the potential to cause serious economic disasters.

The last few years have seen OBP participating in projects to alleviate poverty and improve human health by providing millions of doses of vaccines against zoonotic diseases such as Rift Valley fever.

OBP contributes expert advice and vaccines to control other transboundary animal diseases such as contagious bovine pleural pneumonia, lumpy-skin disease, African horse sickness and anthrax, which affect most African countries.

Over the years, OBP has been participating actively in workshops and conferences arranged by organisations such as the Pan-African Vaccine Network, World Organisation for Animal Health, SADC and the Food and Agriculture Organisation (FAO) of the UN to share and gain technology in improving its services.

Through collaboration with the FAO and the European Union, OBP has also been involved in projects to provide both technical support and vaccines to countries such as the Democratic Republic of Congo, Zimbabwe, Lesotho and Angola.

OBP interacts with both national and international research and academic institutions to introduce new, improved and affordable products.

Animal identification

The Animal Identification Act (Aida), 2002 (Act 6 of 2002), administered by the Directorate: Veterinary Services in the Department of Agriculture, Forestry and Fisheries, regulates the registration of unique markings for all declared animal species.

Under the Act, the Minister of Agriculture, Forestry and Fisheries declares animals for compulsory identification. The national register is available to the South African Police Service through the State Information Technology Agency to help it trace the ownership of 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.

The directorate is also transferring knowledge to rural communities in consultation with the provincial departments of agriculture on various themes such as the Aida, 2002; animal management; preserving fodder; feeding animals; preventative activities; first aid to injured animals; marketing/harvesting of animals and their products; hygienic handling of meat; and milk handling.

The Epidemiology Section is responsible for monitoring animal diseases in the country for both disease-control purposes and as an early warning system.

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 Department of Agriculture, Forestry and Fisheries.

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

Migratory pests

In terms of the Agricultural Pest Act, 1983 (Act 36 of 1983), the Department of Agriculture, Forestry and Fisheries is obliged to control the registered national pests, namely red-billed quelea, locust and blackfly. These are migratory pests and individual farmers cannot be expected to control these to prevent damage in areas away from their own farms.

The ARC provides research support to the department to optimise control procedures in terms of efficacy, cost and environmental considerations. An international communication network has been established with neighbouring countries concerning migratory pest control.

By providing early warning information on cross-border invasions of migratory pests, such as army worm, locust and red-billed quelea, the Information Core for Southern African Migrant Pests enhances the forecasting efficiency of control organisations, thereby assisting national crop-protection agencies to ensure food security.

Marketing

The Directorate: Marketing of the Department of Agriculture, Forestry and Fisheries works closely with the National Agricultural Marketing Council (NAMC) on agricultural marketing matters.

The directorate develops, promotes and facilitates the implementation of programmes and

The introduction of presidential outcomes and the signing of performance agreements by ministers and premiers have highlighted the need to align efforts to ensure that the agenda of a better life for all is fulfilled.

In line with this approach, the Minister of Agriculture, Forestry and Fisheries, Ms Tina Joemat-Pettersson, signed a performance agreement with President Jacob Zuma, which focuses on Outcome 7 (vibrant, equitable and sustainable rural communities and food security for all) and Outcome 10 (protect and enhance our environmental assets and natural resources). Each of these has a set of related outputs, for which the department has determined annual targets.

measures aimed at supporting equitable access to competitive and profitable agricultural markets on a sustainable basis. This broad mandate is achieved by:

- administering market-access measures in the form of issuing trade permits (import and export permits)
- facilitating fair, open, efficient and competitive domestic markets
- developing policies and strategies aimed at enhancing market access, and facilitating the implementation of programmes and measures to promote equitable access to mainstream markets
- liaising with other government departments and relevant parties to enhance the efficiency of the agricultural marketing value chains.

National Agricultural Marketing Council

The NAMC was established in terms of the Marketing of Agricultural Products Act, 1996. The council provides the Minister of Agriculture, Forestry and Fisheries with strategic advice on all agricultural marketing issues to improve market efficiency and access for all participants, optimise export earnings and improve the viability of the agricultural sector.

The council has developed an economic and market research programme that tracks economic trends and provides market information aimed at improving South Africa's position in future global agricultural markets.

The NAMC's Food Price Monitoring initiative is a continuation of the Food Price Monitoring Project, which assists government in understanding the impact of high food-price inflation on the poor.

Agricultural land administration

In terms of the Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970), the Department of Agriculture, Forestry and Fisheries is responsible for regulating the subdivision of agricultural land and its use for purposes other than agriculture.

The core functions of the department in terms of the Act are to:

- protect agricultural land (high-potential and unique agricultural land) through the administration of the Subdivision of Agricultural Land Act, 1970 to enhance the sustainable management of natural resources for food security
- regulate the subdivision of agricultural land into non-viable units/portions and change in land use
- promote sustainable land-use planning.

The Subdirectorate: Subdivision of Agricultural Land Administration is responsible for the processing and approval of the following types of applications in terms of the Subdivision of Agricultural Land Act,1970:

- subdivision of agricultural land
- coupling and consolidation
- registration of undivided shares
- registration of servitudes, of usufructs, share block schemes/sectional title schemes
- township establishment
- applicability
- long-term leases.

Resource Audit

In terms of the Conservation of Agricultural Resources Act (Cara), 1983 (Act 43 of 1983), the Department of Agriculture, Forestry and Fisheries is responsible for providing control over the conservation and sustainable use of natural agricultural resources.

The objectives of the Act are to provide for the conservation of South Africa's natural agricultural resources by maintaining the production potential of land, combating and preventing erosion and weakening or destruction of water sources, protecting the vegetation and combating weeds and invader plants.

The prescribed control measures place a duty of care on all users of agricultural land to conduct farming activities that promote the objectives of the Act.

Land settlement

The overall goal of the Directorate: Land Settlement is to provide support to farmers through land-reform programmes, with the intention of developing viable and sustainable agricultural ventures.

The directorate develops and provides guidelines for the implementation of policies and programmes supporting land- and agrarian-reform beneficiaries. It also facilitates the implementation of land- and agrarian-reform projects and promotes sustainable agriculture for improved livelihoods. Furthermore, the directorate facilitates the effective administration and disposal of state agricultural land.

The directorate ensures farmer support by developing policies such as the Farmer-to-Farmer Mentorship Policy, and implementing programmes such as the Comprehensive Agriculture Support Programme (Casp) and the Land Reform Revitalisation Programme.

In 2010/11, over 5 000 jobs were created as a result of Casp's support interventions, including programmes on state land managed by the department.

In pursuit of Outcome 7, the Department of Agriculture, Forestry and Fisheries aims to increase its support to new and existing smallholder farmers, working in close collaboration with the provinces to achieve its targets.

In the 2011/12 financial year, 15 000 smallholder farmers were targeted, including support provided to small-scale foresters and fishers.

A grant of over R1 billion was allocated to the nine provinces. By June 2011, the provinces had received the initial 10% of their allocation, which was followed by a further 20% in the next month, and the remaining allocations in October 2011 and January 2012.

Casp has been reprioritised to respond timeously to the demands of the Land and Agrarian Reform Project (LARP). The LARP is aimed at accelerating and aligning land and agrarian reform in South Africa.

The LARP focuses on the following objectives:

- redistributing five million ha of white-owned agricultural land to 10 000 new agricultural producers
- increasing black entrepreneurs in the agribusiness industry by 10%
- providing universal access to agricultural support services among the target groups
- increasing the target groups' agricultural production by 10% to 15% under the Ilima/Letsema Campaign
- increasing agricultural trade by 10% to 15% for the target groups.

The LARP is a joint project of the Department of Rural Development and Land Reform; the Department of Agriculture, Forestry and Fisheries; provincial departments of agriculture; agricultural state-owned enterprises; and sector partners.

Ilima/Letsema Campaign

The Department of Agriculture, Forestry and Fisheries encourages household food production through backyard gardens and programmes such as the Household Food Security and Ilima/Letsema Campaign, whose main objective is to motivate communities to plough, plant and produce their own food.

The Ilima/Letsema Campaign continues to elevate agricultural activities; realise the LARP; and function as a mechanism of collaboration towards food security and a developmental platform for local and indigenous resources that will help to continue the fight against high food prices.

This campaign also distributes agricultural starter-packs to poor households and supports small-scale farmers.

A budget of R400 million was earmarked in 2011/12 for this programme.

Food security

The Integrated Food Security and Nutrition Programme (IFSNP) aims to achieve physical, social and economic access to safe and nutritious food for all South Africans. Its goal is to eradicate hunger, malnutrition and food insecurity by 2015.

The IFSNP recognises the broad regional food-security framework that the Regional Indicative Sustainable Development Programme highlighted, and which prompted South Africa to respond to the humanitarian appeal by the UN World Food Programme for emergency food relief in the SADC region.

Food security at household level had been negatively affected by the general global economic decline of the past years.

To increase the capacity to assess vulnerability and target interventions, the department initiated a partnership with the FAO and, together with the SADC, set up the National Vulnerability Assessment Committee for South Africa.

The Department of Agriculture, Forestry and Fisheries held the Comprehensive Africa Agriculture Development Programme (CAADP) Stakeholders' Sensitisation Seminar in October 2011, focusing on the implementation of the CAADP in South Africa. The seminar aimed to strengthen ongoing consultations with agricultural stakeholders on practical policies and programmes for agriculture-led socio-economic growth, especially among smallholder farming communities, and to start the CAADP implementation process. CAADP is envisaged to add value to agricultural development in South Africa, together with the country's existing food security and poverty-alleviation programmes.

With the implementation of viable production interventions, nutrition education is at the centre of the department's activities, and will be conducted in partnership with the departments of health and of basic education.

The implementation of the Zero Hunger Campaign gained momentum in 2010/11.

This focuses primarily on increasing production. It is underpinned by the implementation of the Food Purchase Programme and the facilitation of contract production. The Zero Hunger Campaign is geared towards assisting smallholder farmers to raise production and increase access to markets to generate income. The creation of self-employment opportunities is at the centre of this.

The department wants to ensure that sustainable production technologies are introduced, and that the integration of activities at household and community levels is strengthened.

The department is distributing seeds and seedlings to an increasing number of households.

Mechanisation

Government has embarked on a mechanisation strategy aimed at stimulating production by smallholders, with a special focus on rural areas and the former homelands.

By August 2011, the initial 85 tractors had been increased to 272 and were used in 40 projects to till 12 835 ha of land, benefiting 1 608 people in Mpumalanga.

In KwaZulu-Natal, the 85 tractors were increased to 190 and were used by nearly 200 traditional leaders to service over 9 000 ha.

Regional issues

South Africa participates in the Regional Advisory Committee (RAC) of the Regional Food Security Training Programme (RFSTP).

The RFSTP was developed over a five-year period as endorsed by the RAC. Its activities focus on three main areas: strengthening the supply of food-security training services; strengthening the effective demand for training and development; and sustaining regional markets for food security-related training services.

The SADC has instituted the Subcommittee for Plant Protection, which is tasked with harmonising phytosanitary requirements in southern Africa. South Africa is also a member of the Inter-African Phytosanitary Council, which was established in 1954. Regional plant-protection organisations such as these are able to provide valuable regional coordination of the activities and objectives of the International Plant Protection Convention (IPPC). The Inter-Africa Phytosanitary Council is officially recognised as the Regional Plant Protection Organisation for Africa. The council came into being as the African Union's (AU) phytosanitary coordinating body.

The SADC has produced the Memorandum of Understanding on the Harmonisation of Seed Regulations in the SADC Region, which is based on three technical documents, namely the Regional Variety Release System, Seed Certification and Quality Assurance, and Quarantine and Phytosanitary Measures.

The primary objective of harmonising seed regulations is to resolve the problems addressed in the three documents by integrating smaller and isolated national seed markets into a single, larger SADC seed market. This, in turn, will enhance the introduction of new improved varieties into the region and ease the movement of quality seed from countries with surplus to countries in need of seed. Lower costs and simpler administration will encourage local, small-scale seed producers and suppliers to expand their activities.

International issues

As a signatory to the Rome Declaration of 2003, South Africa has committed itself to the implementation of the World Food Summit Plan of Action. For this purpose, South Africa reports annually to the World Committee for Food Security. South Africa is also collaborating with the FAO on the implementation of the Special Programme for Food Security.

South Africa is an active participant in other international standard-setting bodies that are vital to its global market share, such as the IPPC, OIE and Codex Alimentarius.

International relations

The Department of Agriculture, Forestry and Fisheries' Directorate: International Relations facilitates and coordinates international activities on both multilateral and bilateral bases.

The department is a member of the FAO; the Consultative Group on International Agricultural Research; the Food, Agriculture and Natural Resources Sector of the SADC; the International Seed-Testing Association; the Organisation for Economic Cooperation and Development's Seed Schemes; the Union for the Protection of New Varieties of Plants; the World Organisation for Animal Health; the International Organisation of Vine and Wine; and the International Cotton Advisory Committee.

International trade

The Department of Agriculture, Forestry and Fisheries' Directorate: International Trade analyses international trade and related policies, advises on multilateral and bilateral agricultural trade policy, presents the interests of South African agriculture in various trade-negotiating initiatives and promotes trade-development initiatives aimed at broadening the exporter base. The directorate works closely with the Department of Trade and Industry, and takes responsibility for the agricultural part of trade negotiations in the World Trade Organisation's (WTO) multilateral negotiations as well as in various bilateral trade-negotiating initiatives.

The directorate continuously conducts strategic market research to inform the positioning of the agricultural export sector in the global trading environment. It investigates and evaluates export opportunities for agricultural products on world markets.

These include strategies to access markets where preferential trade agreements do not exist.

The directorate facilitates national capacity-building and the training of role players in the use of trade tools.

The directorate is also responsible for implementing, monitoring and reporting on South Africa's commitments under the WTO Agreement on Agriculture. South Africa works with its alliance partners of the G20, the Cairns Group and the Africa Group.

The department's objectives in the Doha Development Round of the WTO are to:

- ensure policy space to support South Africa's developing agricultural sector
- bring about a substantial reduction in trade and production-distorting subsidies and export subsidies given mainly by developed countries
- improve the access of South African agricultural exports to other markets.

The overall objective is to establish a fair trading system in which South African agriculture can compete as an equal.

Trade with Africa

South Africa's trade relations with the rest of Africa, excluding the SADC and Sacu, are the result of bilateral cooperation agreements with individual countries.

The country is positioning itself in Africa by special interventions to expand the availability of South African services in the SADC region and improve the trading environment. Examples include agricultural trade information, technical cooperation, and interventions to mitigate production and trade risks.

South Africa, as a member of Sacu and a signatory of the SADC Treaty, is committed to sharing its objectives with the other nations in the region. Free trade within southern Africa under the SADC Trade Protocol started between Sacu and Mauritius in September 2000. Sacu opened its markets to the countries of the region by implementing the first phase of tariff reduction.

Since 2000, SADC tariffs have declined steadily, making it possible for the participating members to trade at a lower cost. Sacu can import from the region over 80% of agricultural products at zero duty. All other countries will have the same advantage at different deadlines between 2012 and 2015.

The signatories to the SADC Agreement are Angola, Botswana, the Democratic Republic of Congo (DRC), Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, the Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. However, Angola, the DRC and Madagascar have not participated in the preferential trade as yet.

The main objectives of the SADC Trade Protocol are to:

- create an environment of free flow of trade within the region and therefore to provide diverse markets for the countries to exploit their comparative and competitive advantages
- establish cooperation and participation in the economic development of the region through consultation and policy harmonisation.

The alignment of sanitary and phytosanitary standards within the SADC is in progress. A number of member countries will take some time to establish the necessary infrastructure for the standards to be implemented efficiently. South Africa has offered technical assistance to member countries for this purpose. South African standards, in accordance with the WTO regulations, apply to all imports of fresh commodities.

An annex to the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) as part of the Trade Protocol was signed in 2008, based on which the member states are establishing national legislation to match the required standards of the WTO. The faster the SADC countries achieve this, the easier it will be for South Africa to trade in agriculture with them.

The first objective of the Trade Protocol is to remove both tariff and non-tariff barriers to trade among SADC countries. The SADC has set up an electronic reporting system for non-tariff barriers in which the Department of Agriculture, Forestry and Fisheries is involved as a contact point to receive traders' complaints.

Trade relations with African states are politically important, and of growing economic importance to South Africa. The country has strong and mutually dependent economic links with southern African states through Sacu and the SADC. The NGP Framework has also embraced intra-Africa trade as an important strategic focus in the context of developing and strengthening relations with neighbouring countries.

International agreements and conventions

South Africa is a signatory to several international agreements and conventions, requiring that the matter of sustainable resource-use and management be addressed responsibly.

Agenda 21 is an action plan and blueprint for sustainable development, and was one of five documents adopted by more than 178 governments at the UN Conference on Environment and Development in Rio de Janeiro in 1992. Specific to sustainable resource-use is Chapter 14, which addresses the promotion of agriculture and rural development.

International conventions that apply to aspects of sustainable resource-use include the Convention on Biological Diversity, the UN Framework Convention on Climate Change (UNFCCC) and the Convention to Combat Desertification (CCD). The CCD requires that South Africa compiles a national action programme. It will be integrated into a regional programme for the SADC region. All these activities are receiving attention under the leadership of the Department of Environmental Affairs, involving all stakeholders, including the national and provincial departments of agriculture.

Regulatory services

The directorates: inspection services (IS) and plant health primarily enforce the department's regulatory activities regarding plants and plant products. By granting import authorisation, the Directorate: Plant Production regulates imports of plant and propagating material of varieties not included in the national varietal lists.

The department's regulatory activities also include the inspection of plants, animals and their products. The Directorate: IS enforces this activity.

It is involved in inspections and other related activities aimed at ensuring that imported animals and their products are free from disease, and imported and exported plants and products are free from quarantine pests and diseases. Inspections take place at pre-border and post-border control levels, and comply with genetic resources and quality-assurance prescripts and standards.

Import requirements vary according to the product and the animal-health situation in individual countries.

South Africa is an active member of the OIE. Disease reports are received from the OIE and through direct contact with veterinary administrations in exporting countries.

Trade in animals and animal products is based on a series of requirements considered appropriate by the importing country to prevent the entry of diseases.

The department is one of the key regulatory state departments with the authority to enforce laws enacted by Parliament to protect the South African consumer, producer and farmer; the environment; and other national interests.

The Division: Ports of Entry Point Control conducts inspections at designated ports of entry. To strengthen border inspections, the directorate has introduced the use of detector dogs at the OR Tambo International Airport in Kempton Park. They are trained to detect regulated agricultural products in international arrival halls and cargo terminals. Pre-border inspections are aimed at

exports for compliance with international requirements of trading partners. Post-border inspections are intended for those regulated articles that were given extended detentions at borders or escaped the border-control inspections.

The Division: National Plants and Plant Products Inspection Services conducts these inspections, together with national control inspections, for compliance with plant-health, genetic-resources and food- and quality-assurance legislation. The division also carries out various surveys around the country.

The Directorate: Plant Health's core mandate is to facilitate safe trade in plants and plant products by managing the risks associated with plant pests and diseases by developing and amending phytosanitary legislation.

Control measures are published to prevent or combat the spread of pests to other areas in the country. Import control is vital to prevent the introduction of potentially harmful foreign pests. Prospective importers of plants and plant products have to apply for an import permit for those controlled goods mentioned in the Agricultural Pests Act, 1983 (Act 36 of 1983).

The Pest Risk-Analysis (PRA) Division conducts scientific analyses of risks posed, based on scientific data. Specific phytosanitary requirements are set out according to the phytosanitary risk(s) involved. These are stipulated in the permit issued to the importer. Importers are obliged to present the consignment to the official inspection representative at the port of entry.

The Directorate: Quarantine Services manages the risks associated with the importation of plant propagation material. This is achieved by prescribing a compulsory quarantine detention period for specific high-risk categories as determined by the PRA Division of the Directorate: Plant Health.

The core function of Diagnostic Services is to prevent the introduction of harmful exotic plant pests by testing and auditing all imported plant material.

The Early Warning Division ensures early detection of economically important exotic pests and through surveillance, detection and rapid response prevents the spread of such pests, thereby maintaining pest-free areas in respect of specific pests. Closely linked to early detection is implementing proper pest-awareness programmes to ensure the agricultural sector and the general public are kept informed. The International Standards Division aims to facilitate effective and efficient official phytosanitary communication between the Directorate: Plant Health and its international, regional and other national plant-health clients.

This is done through the management of a national plant-protection contact point and participation in the initiatives of external clients such as the WTO Committee on Sanitary and Phytosanitary Measures, the IPPC and its working groups and committees, the Inter-African Phytosanitary Council, other national plant-protection organisations or governments, research institutes and members of the international agricultural trade sector.

The Import/Export Protocols Division's core function is to ensure and maintain 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 in compliance with trading-partner requirements according to established protocols.

Food import and export standards

The need for a centralised source of information and services for import and export standards and requirements for agricultural food products is fundamental in promoting smooth trade, both domestically and internationally. Internationally, standards for food imports and exports are harmonised through various international standard-setting bodies subscribed to under the WTO and to which South Africa is a signatory, such as the SPS Agreement, OIE, Codex Alimentarius Commission and the IPPC. These requirements aim to protect consumer rights, the environment, animal life and public health. The Directorate: Food Import and Export Standards aims to serve as a central point and vehicle to collate information regarding the standards for sanitary and phytosanitary measures applicable to trade in animal and plant products. The directorate also seeks to coordinate promotion and awareness programmes addressing cross-cutting standards and legislative requirements for food safety, quality, plant and animal health.

National analytical services

The Department of Agriculture, Forestry and Fisheries' laboratories in Pretoria and Stellenbosch support the units within the department

responsible for formulating and updating regulations regarding agricultural foods of plant origin and liquor products.

In 2011, the laboratory worked on a project to expand the scope of testing for pesticide residues. By June 2011, 19 chemicals had been included in the existing scope of testing with the liquid chromatography-mass spectrometry/mass spectrometer. This is expected to ensure that South Africa meets its obligations in terms of food safety and quality risk monitoring and improve market access for South African agricultural products of plant origin.

Risk management

Information, policies and implementation

The Agricultural Flood Management Plan Workshop was held in Gauteng in November 2010 to solicit input and comments from stakeholders. The National Agricultural Disaster Risk-Management Committee (Narmco) provides strategic guidance on policy and advises the Ministry of Agriculture, Forestry and Fisheries on issues relating to agricultural disaster risk management. Narmco comprises members from provincial departments of agriculture, organised agriculture such as the National African Farmers' Union (Nafu), Agri SA, Transvaal Agricultural Union South Africa (TAU SA), the ARC and relevant directorates within the department.

The established National Drought Task Team, chaired by the Department of Agriculture, Forestry and Fisheries, 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, the ARC and relevant directorates within the department.

The Mentorship Programme was rolled out to familiarise provincial departments with disaster risk-management issues.

In 2011, the directorate was developing an information management system. The interface includes features such as a database of farmers; climate-change information; applicable disaster risk-management policies; and early warning information, programmes and projects. The system will also serve provinces as a reporting platform.

Climate change

In implementing an effective climate-change programme in compliance with the National Climate Change Response Strategy and in support of disaster risk management, the Department of Agriculture, Forestry and Fisheries has developed measures aimed at facilitating mitigation and adaptation to climate change in the sector; minimising vulnerability to the impacts of climate change; as well as greenhouse-gas (GHG) emissions.

The sector conducted a preliminary investigation into climate change in the Free State during 2010/11. The main aim was to identify areas in the south-western parts of the province (Petrusburg, Fauresmith and Luckhoff) vulnerable to the impact of climate change and variability in the agricultural sector.

The department supports research and development initiatives as well as programmes carried out throughout the world for the purpose of gaining a better understanding of the processes behind climate change. South Africa is a full member of the Global Research Alliance. The objectives of the alliance are:

- enhancing collaborative research into agricultural emission reductions
- increasing support and resourcing for agricultural emission research
- improving understanding and measurement of agricultural emissions.

By June 2011, the research report on the *Agricultural GHG Inventory* and capacity-building for the sector had been published. The results of the project will inform the development of the Mitigation Strategy, which is expected to assist in contributing to achieving food security in the country.

The *Atlas of Climate Change* and *The South African Agricultural Sector: A 2010 Perspective*, aimed at investigating the first- to fourth-order impacts of climate change on agriculture, were completed and published.

The results of the atlas are expected to inform the development of an adaptation strategy for the sector. These were among the Department of Agriculture, Forestry and Fisheries-supported climate-change projects earmarked for showcasing at the 17th Conference of the Parties (COP17) under the UNFCCC, held in Durban in November and December 2011.

As a precursor to the COP17, the department hosted the National Climate Change Conference

for Agriculture, Forestry and Fisheries in August 2011.

Early warning unit

The department's Early Warning System (EWS) communicates monthly advisories and daily extreme weather warnings in support of disaster risk reduction. Twelve monthly advisories and 280 extreme weather warnings were issued in 2010/11. The implementation of the EWS is continuously monitored and evaluated to identify and address gaps in the system so that it can be strengthened.

National Agro-Meteorological Committee meetings are held quarterly according to the terms of reference. The objective of the committee is to assist in the implementation of the EWS. During 2010/11, stakeholders such as the South African Weather Service, the ARC, provincial departments of agriculture and academic institutions participated in four meetings.

Post-disaster recovery and rehabilitation

In 2010/11, 4 603 targeted beneficiaries were reached by three disaster-relief schemes. The schemes covered drought, floods and veld fires as these are the most common disasters experienced in the country. The farming communities affected by drought were assisted with the repair of agricultural infrastructure for livestock water and livestock feed, including the transportation of feed. Assistance made available through the Flood Relief Scheme included the repair of agricultural infrastructure and soil rehabilitation. Assistance provided by the Veld Fire Relief Scheme involved the repair of agricultural infrastructure, and provision and transportation of livestock feed.

Drought management

Climate variability has induced drought interspersed with flooding, resulting in lower-than-average agricultural production yields. The Department of Agriculture, Forestry and Fisheries has completed two policy documents: the Agricultural Disaster Risk-Management Plan and the Agricultural Drought-Management Plan.

Credit and assistance

The six major sources of credit for farmers are banks (50%), agricultural cooperatives and agribusinesses (12%), the Land Bank (21%), private creditors (8%), other creditors and financial institutions (9%), and the State (1%).

Business and Entrepreneurial Development (BED)

The Directorate: BED in the Department of Agriculture, Forestry and Fisheries is mandated to ensure that emerging entrepreneurs and established enterprises have some synergy in the development of their agribusiness endeavours. The entire process addresses the strategic objectives of eliminating skewed participation and inequity; optimising growth, remunerative job opportunities and income; and ensuring efficient and effective governance. It further promotes and provides strategic support in the development of viable and empowered businesses, stimulating growth and promoting unity through partnerships and niches.

The Business Development Unit works closely with industries/commodity groups and other state departments and tiers of government, facilitating the establishment of grassroots commodity structures. The outcome is to provide a conduit for farmers to access resource reservoirs, government interventions and other support initiatives to grow their businesses, create jobs and increase their incomes.

It also assists marginalised groups in creating, expanding and rehabilitating business to become profitable and sustainable in the long term, focusing on growth and wealth creation based on mutual gains in the sector. It also encourages and facilitates win-win partnerships for niche enterprises at all levels in the agricultural value chain.

The directorate helps support and guide the cotton, grain and fruit industries' implementation of their developed strategies.

Through joint internal actions in the department, activities are being mainstreamed to reach more black farmer organisations and entrepreneurs and accelerate their participation in commodity groups through farmer-mobilisation interventions.

The unit supports Operation Gijima, Women in Agriculture and Rural Development, and the National Movement for Rural Women projects, as well as programmes involving people living with disabilities, youth and farm workers.

It collaborates with other tiers of government and sectors in rendering advice, support and guidance to agricultural value-chain projects

owned by land-acquisition beneficiaries, designated groups and other departmental grant-funded projects.

The Entrepreneurial Development Unit is responsible for initiating and rolling out small, medium and micro-enterprise support interventions and capacity-building through facilitators and mentors in collaboration with partners within the provinces. These interventions focus on entrepreneurial development, increased agricultural enterprises' performance and job-creation activities, especially in rural development nodes.

The Directorate: Broad-Based Black Economic Empowerment (BBBEE) Charters Compliance is responsible for the development of the agriculture, forestry and fisheries sectors' charters. Its functions are to:

- monitor the implementation of the developed AgriBEE and forestry charters
- report on the progress of the seven elements of empowerment as per the scorecard of these charters
- support the functioning of the sectors' charter council institutions.

LandCare Programme

The LandCare Programme is a community-based and government-supported approach to the sustainable management and use of agricultural natural resources.

The LandCare Programme's vision is one of communities and individuals leading the adoption of an ecologically sustainable approach to the management of South Africa's environmental and natural resources, while improving their quality of life. It implies that cultivation, livestock grazing and the harvesting of natural resources should be managed in such a manner that no further degradation (such as nutrient loss, soil erosion, loss of components of the vegetation and increased run-off) occurs.

The LandCare Programme continues to perform a significant role in reversing soil and land degradation through support provided to community initiatives. This programme contributes significantly to green job creation, poverty eradication, food security and a better life for all.

During 2010/11, the programme directly and indirectly benefited 28 161 land users. A total of 66 272 ha were rehabilitated in all provinces through the construction of soil conservation works, range-land use and protection works and the eradication of declared weeds and invasive plants.

As part of the 2011/12 LandCare Programme, about 15 000 job opportunities were created through rehabilitation and land-use activities.

In 2011/12, R57,7 million was earmarked for the LandCare Programme.

The LandCare Programme has been expanded into the following subprogrammes:

WaterCare

This theme establishes a framework for managing land and preventing the silting up of dams for irrigation. WaterCare works in partnership with the community to develop action plans for managing and restoring irrigation schemes. The rehabilitation of irrigation schemes increases water supply and household food security. WaterCare promotes the development of techniques for water-resource management and encourages opportunities for training in this field.

VeldCare

This theme 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 SoilCare theme encourages rural farmers to build innovative structures to combat soil erosion. This includes reducing the depletion of soil fertility and acidity. Through SoilCare, sustainable agricultural production systems such as diversification, management of input and conservation tillage are introduced.

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 residues
- diversified crop-rotation practices.

Junior LandCare

Junior LandCare encourages young people to develop a sense of responsibility towards the land and other natural resources, and conserve these for future generations. 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.

In 2010/11, the Junior LandCare Programme, focusing on enhancing an ethic of natural resources stewardship, reached 22 166 young people. In total, 14 815 green jobs were created through rehabilitation works related to soil, water and veld management.

Eco-Technology Programme (ETP)

The objective of the ETP is to identify, adapt, demonstrate and spread promising and appropriate eco-technologies (such as conservation, farming and water harvesting) locally, which will provide resource-poor farmers with social, economic and environmental benefits. The expected outcomes of this theme are an increased number of promising and appropriate eco-technologies identified and evaluated on farms; an increasing number of farmers adopting eco-technologies; and improved social, economic and environmental (e.g. employment) benefits.

ETPs will initially be implemented in presidential nodal areas where water is very scarce, such as KwaZulu-Natal (Umkhanyakude and Zululand) and Limpopo (Sekhukhune and Bohlabela).

Infield Rainwater Harvesting (IRWH)

IRWH technology, which improves efficiency of water use and increases yields with a suitable choice of crop combinations under low and erratic rainfall conditions on low-potential clay soils, has been transferred with great success to numerous communities in the Free State and Eastern Cape.

Using IRWH in croplands, community members have increased their maize and sunflower yields by between 26% and 40% compared with conventional methods. Socio-economic studies of vegetable gardens have shown that IRWH can ensure household food security for nine out of 10 years, compared to three out of 10 years using conventional cropping methods.

Transfer of technology, training and extension are used to implement IRWH, with consequent improvement in household livelihoods in rural communities where most members live below the poverty line.

Land and Agricultural Development Bank of South Africa (Land Bank)

The Land Bank is a specialist agricultural bank guided by a government mandate to provide financial services to the commercial farming sector and agribusiness, and make available new, appropriately designed financial products that facilitate access to finance by new entrants to agriculture from historically disadvantaged backgrounds.

In 2010/11, the bank showed a turnaround in its financial health and its effectiveness in supporting transformation in the farming sector. Capital adequacy was above the level set as a condition for the Government guarantee, and liquidity levels improved. The focus for 2011/12 was on increasing the bank's development impact, working with government to find suitable financing solutions for emerging farmers, growing the loan book while reducing the cost of funding and establishing a

In August 2011, the Minister of Finance, Mr Pravin Gordhan, announced at the launch of the Land Bank's *2010/11 Annual Report* the bank's commitment to spend R1 billion on emerging farmers in the next two years. This is expected to unlock the long-term potential growth of agriculture as one of the pillars of South Africa's economic development. The Land Bank's allocation of resources towards emerging farmers was consistent with government's intention of mainstreaming agriculture sectoral growth in the New Growth Path.

wholesale finance facility for strategic partners to on-lend to qualifying participants.

Micro-Agricultural Financial Institutions of South Africa (Mafisa)

By June 2011, the implementation of Mafisa was still on course.

The number of accredited institutions retailing Mafisa loans had increased to nine following the inclusion of the South African Sugar Association (Sasa) as one of the retail intermediaries. Sasa will be providing production loans to sugar-cane growers in KwaZulu-Natal and Mpumalanga.

In 2010/11, Mafisa disbursed loans amounting to R96 million.

The Department of Agriculture, Forestry and Fisheries had set aside R470 million to provide agricultural production loans to qualifying applicants through financial institutions retailing Mafisa funds. Institutions accredited to retail Mafisa loans include cooperatives, commodity organisations and development finance institutions.

Mafisa loans are available for agriculture-related enterprises, covering the entire agricultural value chain. Funded enterprises include poultry, livestock, vegetables, sugar cane and grain crops.

Agri South Africa

Agri SA was established in 1904 as the South African Agricultural Union. It serves some 70 000 large and small commercial farmers.

On behalf of its members, Agri SA promotes the development, profitability and stability of commercial agriculture through its involvement in and input at national and international policy levels.

Agricultural Business Chamber (ABC)

The ABC is a voluntary, dynamic and influential association of agribusinesses. Its mission is to negotiate and position for a favourable agribusiness environment where members can perform competitively and profitably, and prosper as a result. Other focus areas include:

- serving the broader and common business interests of agribusinesses in South Africa
- facilitating considerable networking opportunities so that South African agribusinesses can play an active and creative role within the local and international organised business environment
- being involved in the legislative and policy environment on many fronts.

The ABC is affiliated to Business Unity South Africa and the New Partnership for Africa's Development (Nepad) Business Foundation, and associated with various international organisations.

In 2010/11, the ABC focused primarily on:

- economic policy, international trade, and national and international competitiveness
- BEE, transformation and the promotion of links between agribusinesses and the developing agricultural sector
- agrologistics and infrastructural constraints
- Nepad and African issues, through the Africa Agribusiness Forum, Nepad Business Foundation, Nepad-Organisation for Economic Co-operation and Development Africa Investment Initiative, Alliance for a Green Africa and other forums
- skills training, labour issues and HIV and AIDS.

Transvaal Agricultural Union South Africa

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
- safety and security.

TAU SA conducts various projects to enhance the concept of successful agriculture.

National African Farmers' Union of South Africa

Nafu is an independent, non-governmental, voluntary organisation representing farmers in South Africa. The organisation was formed in 1991 with the assistance and support of the National African Federated Chamber of Commerce and Industries.

Agribusiness as an economic sector

Agribusiness can be divided into two categories: non-cooperative business ventures and cooperatives or transformed cooperatives.

Non-cooperative business ventures, also known as profit companies, are involved in the production and distribution of agricultural equip-

ment and production requisites, and the marketing of agricultural products.

Cooperatives dominate the distribution of intermediate requisites and the handling, processing and marketing of agricultural products.

Agricultural cooperatives or agribusinesses are regarded as the farmers' own independent business organisations. They supply their members with production input such as seed, fertiliser, fuel and repair services. They also provide credit and extension services, and handle a large percentage of their members' produce.

Central cooperatives in the country aim to supply the primary cooperatives with specific services such as the processing and marketing of agricultural products, insurance services for crops, short-term cover and farming requisites.

The structure of agribusiness has changed since the deregulation of the agricultural sector into a free-market economy in 1994. Many cooperatives have transformed into private companies, consolidations and mergers have occurred, international groups have entered South Africa and agribusinesses have listed on the JSE Limited.

Smallholder development

In line with the outcome-based approach towards supporting farmers, Outcome 7 mandates the increase in the support of smallholder farmers from a baseline of 200 000 to 250 000 by 2014.

The Directorate: Smallholder Development, in collaboration with the provincial departments of agriculture, ensures the achievement of increased support to the 50 000 new and existing smallholder farmers. The support entails smallholder farmers having access to markets, finances, infrastructural support, training and production inputs. The directorate aims to:

- improve the production systems and development support of smallholder farmers in the agriculture, forestry and fisheries sectors to promote sustainable livelihoods
- promote and facilitate the design and planning of farmer-settlement guidelines for new farmers
- support existing farmers through food-security intervention programmes
- develop and promote national policy and standards for support leading to the graduation of smallholder farmers to commercial farmers
- monitor and evaluate policies and programmes that target smallholder farmer support
- coordinate activities that are cross-cutting with other entities to promote household food-security programmes.

Extension and advisory services

Over the past three years, the Department of Agriculture, Forestry and Fisheries has implemented an extension and advisory service revitalisation programme of R555,5 million. To improve the ratio of extension officers to farmers, by the end of 2010/11, more than 1 000 extension and advisory officers had been recruited.

To ensure that these officers are visible on the ground and accountable, the *Farmer's Green Book* was instituted as a tool to be used by farmers to record extension officers' visits.

To ensure access to appropriate information, the department facilitated the countrywide adoption of the state-of-the-art Extension Suite On-Line. This computerised system enables extension officers to access relevant information on the spot as and when it is needed by farmers.

By June 2011, a total of 1 149 extension officers were registered for qualification upgrades in line with the approved norms and standards, and 5 110 extension officers had completed short technical, generic and information and communications technology skills training programmes.

Training and research

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

At grassroots level, South Africa has a number of specialised agricultural high schools and regular schools offering a range of agricultural subjects.

Prospective farmers and technicians are trained at the country's colleges of agriculture.

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

This training potential is coupled with a 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.

Agricultural research is conducted by the ARC, several universities, various private-sector organisations and by some provincial departments of agriculture, which are responsible for technological development and transfer aimed at improving managerial efficiency on farms.

The ARC, a state-owned entity, set up in terms of the Agricultural Research Act, 1990 (Act 86 of 1990), is the largest agricultural research organisation in Africa.

The Directorate: Policy Research Support in the Department of Agriculture, Forestry and Fisheries coordinates all agricultural research and development (R&D) activities.

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 R&D 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 R&D matters within the national agricultural research system. The NARF facilitates consensus and makes recommendations to government and others on the coordination of R&D and technology transfer to enhance national economic growth, social welfare and environmental sustainability. Annual meetings are held to discuss research needs, priorities and budgeting.

At a conference on rural poverty hosted by the United Nations International Fund for Agricultural Development in May 2011, the Minister of Agriculture, Forestry and Fisheries, Ms Tina Joemat-Pettersson, said that Africa could improve food security and boost economic growth by increasing support for smallholder farmers.

There are about 500 million smallholder farms worldwide and about two billion people depend on them for their livelihoods, according to the International Fund for Agricultural Development. These farms produce about 80% of food consumed in Asia and sub-Saharan Africa.

Agriculture has a significant role in economic development and job creation. The agriculture value-chain has been identified in the New Growth Path as one of the key sectors to grow the country's employment.

Colleges of agriculture

In 2011, the department was in the process of transforming the colleges of agriculture into national agricultural training institutes (ATIs) and completed a comprehensive audit of these institutions. The audit looked at the state of infrastructure at these institutions, the academic and skills training programmes offered, their accreditation status, the governance structures in place and the financial and logistical systems.

In 2011/12, R50 million was made available to the 12 ATIs. The focus was on infrastructure improvement, including revitalising the computer laboratories at these institutions.

The department received R20 million through a partnership with the Netherlands Institute for Capacity-Building at Higher Education Institutions.

This project will strengthen the capacity of ATIs as centres of excellence, especially in the provision of training for smallholder producers in the country. Government also enlisted technical assistance from Germany in developing a national strategy on relevant vocational training to be incorporated as part of the ATIs' curricula.

In 2011/12, the department aimed to accelerate work towards the promulgation of the Agricultural Training Institute Bill, which will prescribe a national model of governance for ATIs.

Forestry

The forestry industry is one of the strategic economic sectors in South Africa with a significant contribution towards economic growth and job creation.

In terms of land use, the area under forestry totals about 1,275 million ha or approximately 1% of the total South African land area of 122,3 million ha. The forestry sector (forestry and forest products) contributes 1,20% to GDP. In terms of regional GDP, forestry in KwaZulu-Natal contributes 4,5%; in Mpumalanga 4,7%; in the Eastern Cape 0,9%; and about 0,5% in Limpopo. The value of exported forest products increased from R9,5 billion in 2001 to R13,4 billion in 2010.

The forestry sector employed around 201 025 people in 2009.

That year, total investment in the forestry industry amounted to R24,8 billion. This comprised 58,5% in trees; 19,4% in land; 13% in roads; 6,2% in fixed assets; and 2,8% in moveable assets. Regarding investment in the forest products sector by type of processing plant for 2009,

the total book value of investments amounted to R15,7 billion. This investment comprised 82,7% in pulp and board plants; 11,8% in sawmills and veneer plants; 1% in pole plants; 0,3% in mining timber; and 4,2% other plants.

South Africa also has rich indigenous forests, which have been inventoried by the Department of Agriculture, Forestry and Fisheries and are closely monitored and protected. About half of the more than 1 700 indigenous tree and shrub species, representing some 530 000 ha of dense growth found in South Africa, 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, encompassed in the Garden Route National Park, are important tourist attractions.

The UN General Assembly declared 2011 to be the International Year of Forests.

A total of R451,6 million was allocated to the Forestry Branch to be used to pursue the desired outcomes. The UN afforded South Africa the opportunity to host the World Forestry Congress in 2015.

In recognising the forestry sector's important contribution to the economy and in line with the provisions of the Forestry Charter, role players have taken steps to ensure there is continued and sustainable use of forestry land for timber production.

The Department of Agriculture, Forestry and Fisheries aims to significantly contribute to eradicating poverty through the Forestry Livelihoods Programme, by focusing on basic needs, saving cash resources and providing a safety net. Firewood, building poles, medicinal plants and edible fruits are all critical to the livelihoods of the rural poor.

The department aims to develop human resources through forestry-sector skills-develop ment initiatives and to promote employment through commercial forestry activities such as forestation and downstream activities. The integration of forestry programmes into provincial and municipal development plans will assist the Plant a Million Trees Campaign.

The department aims to pursue the afforestation target of 10 000 ha of net new afforestation a year. Nearly 3 000 ha of area had been afforested in the Eastern Cape and KwaZulu-Natal by the end of March 2011.

The focus will remain on encouraging co-operatives, simplifying and streamlining the regulatory environment, training and extension, supporting the implementation of rural credit and offering incentives for new entrants.

In terms of the economic growth and development that forestry offers, the Department of Agriculture, Forestry and Fisheries is working closely with other government structures in the Eastern Cape and KwaZulu-Natal to fast-track the afforestation licensing process. In the Eastern Cape, funds have been secured to assist communities with the processes of environmental impact assessments – a prerequisite to precede any afforestation activity.

Afforestation will take place in rural areas where there are few other viable opportunities for job creation and economic activity. The development of these additional raw material resources will attract greater processing capacity in the form of sawmills, board mills, chipping plants and treatment plants. All these will lead to broad economic growth. An additional R500 million a year could be generated from such plantations.

Over the past few years, much work has been done in the forestry sector to improve yields, restructure institutions, provide community access and redefine government's role.

The forestry programme also encompasses expanded greening and tree-planting projects. The programme prioritises work on fire-fighting programmes (for example, the Working on Fire Programme) and encourages the establishment of fire-protection associations (FPAs).

The total industry turnover was about R20,4 billion in 2009, including R10,7 billion worth of wood-pulp.

In August 2011, a Sydney gum tree (*Eucalyptus saligna*), over 80 m tall, broke the previous South African tree height record held by two gum trees, known as the "Twin Giants of Magoebaskloof", by a metre. This tree has also reached a new African tree height record. The Sydney gum tree towers above a stand of gum trees planted in 1906 in the Woodbush Forest Estate in Limpopo. The tree-measuring expedition was organised by the Department of Agriculture, Forestry and Fisheries and sponsored by Stihl South Africa. Three giant Mexican pine trees (*Pinus oocarpa*) were also climbed. The tallest measured over 50 m. Few pine trees anywhere in the world grow this tall. It is estimated that the pine trees, like their gum tree counterparts nearby, are more than a century old.

A pulpwood intake of about 12,9 million m^3; mining timber of 759 000 m^3; charcoal of 264 000 m^3; 4,1 million m^3 of sawlogs; and veneer logs and poles of about 546 000 m^3 were transferred to processing plants in 2009.

Forestry initiatives

Two different trees of the year are nominated annually: a common variety and the scarcer, possibly endangered, species.

The common tree of the year for 2011 was *Pappea capensis* (jacket-plum, indaba tree or bushveld cherry) and the rare trees were the *Genus Pavetta* (bride's bushes) and the *Nuxia congesta* (common wild elder).

National Arbour Week (1 to 7 September) promotes the planting and maintenance of indigenous trees throughout South Africa. It highlights the opportunities for sustainable economic development, community participation, poverty alleviation and job creation in forestry to create a better life for all. The Arbour Week Campaign aims to:

- promote a better understanding of trees, especially indigenous ones
- highlight the essential role trees play in sustainable development and the livelihoods of people and their environment
- provide stakeholders with the opportunity to raise awareness of South Africa's urban greening initiatives
- encourage communities and businesses to participate in various greening activities
- encourage the youth to participate in tree-planting activities and related environmental-education programmes.

The theme for Arbour Week 2011 was *Forests for People*.

Champion Tree Project

South Africa has a rich heritage of trees. The Champion Tree Project is aimed at identifying and protecting individual trees of national conservation importance under the National Forests Act, 1998 (Act 30 of 1998).

Trees can be nominated on the basis of their size, age, aesthetic value, cultural-historic value or importance for tourism.

Only trees of national importance are protected. In the long run, however, provincial and local authorities will be encouraged to develop their own local Champion Tree lists.

The first individual tree to be declared as protected under the National Forests Act, 1998 in 2003, was a historic English oak tree, the only remnant of the old Sophiatown that was razed by the previous government when it resettled that community in the 1950s. This intervention was an attempt by a property owner to stop the imminent destruction of the tree. Protection was afforded only after the tree was severely pruned. This was the starting point of the Champion Tree Project, aimed at preventing similar destruction of other trees of national importance by identifying and declaring them as protected.

By May 2011, 56 trees and groups of trees had been declared protected as champion trees.

Among the protected trees are the:

- Tsitsikamma Big Tree along the Garden Route
- Post Office milkwood tree of Mossel Bay
- Sagole baobab in Limpopo
- camphor trees planted at Vergelegen Estate in the Western Cape three centuries ago.

The oldest planted tree is a saffron pear, brought from the Netherlands and planted in the Company's Gardens more than three centuries ago.

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 (daughter of Bram Fischer who was a founder member of the South African Communist Party).

The Champion Tree project of South Africa is the only one of its kind in Africa.

Million Trees Programme

The Million Trees Programme was launched as a greening initiative in 2007. Its purpose is to ensure that at least one million trees are planted every year. The majority of trees planted comprise fruit trees and indigenous ornamental shade trees. The programme is a partnership between the three spheres of government, non-governmental and community-based organisations, schools and the corporate sector.

The Million Trees Programme contributes towards global initiatives to promote greening and tree planting.

Since the inception of this programme, more than four million trees have been planted by the department and other stakeholders. A major focus area for this programme has been the Comprehensive Rural Development Programme's (CRDP) nodal areas. In an effort to ensure the

programme is implemented more broadly, government is calling on the corporate sector to make a contribution, and for citizens and organisations to participate in this important undertaking.

In 2007/08, around 1 700 000 trees were planted, followed by around 1 300 000 trees in 2008/09 and 1 277 805 trees in 2009/10.

Contributing to socio-economic reform and growth

Government recognises that BEE will not be effective if it does not have the support of the private sector.

The BBBEE Charter for the Forest Sector will be instrumental in achieving the objectives of the scorecard as suggested by the Department of Trade and Industry.

The vision of the charter is that of:

- an inclusive and equitable forestry sector in which previously disadvantaged women and men participate fully
- a forestry sector that is characterised by the sustainable use of resources, sustainable growth, international competitiveness and profitability for all its participants
- a forestry sector that contributes meaningfully to poverty eradication, job creation, rural development and economic value-adding activities.

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

Forestry enterprise development (FED) relates to the concept of using forests and forest-based resources as a vehicle for economic growth, employment and socio-economic upliftment that takes people from a subsistence livelihood system into a market economy. The concept is also central to the department's pro-poor agenda and a key component of BBBEE in the forestry sector.

The Department of Agriculture, Forestry and Fisheries supports FED. This includes transferring state forests, developing an afforestation strategy for the Eastern Cape and KwaZulu-Natal, and including forestry as a key sector in provincial growth and development plans.

The Directorate: Forestry Development supports the establishment of community projects through regional forestry staff.

Current projects include beekeeping, which is a partnership with the ARC, and establishing medicinal nurseries in partnership with various stakeholders.

Following restructuring, the commercial plantation forests of the South African Forestry Company Limited (Safcol) and the then Department of Water Affairs and Forestry were combined and packaged into five stand-alone special-purpose vehicles, operating as wholly owned subsidiaries of Safcol.

South African Forestry Company Limited

Safcol continues to contribute to rural welfare and development. In Mpumalanga, Limpopo and KwaZulu-Natal where unemployment levels are high, the company provides approximately 2 200 permanent jobs and 2 000 contractual jobs.

The department has been exploring a range of different business models and institutional structures through which the developmental impact of Safcol's human and financial resources could be optimised. This was expected to assist in providing certainty for the business and direction for the company's operations. Keen consultation with key stakeholders will also be required before taking the matter to Cabinet for consideration. Downstream economic activities in rural areas, from timber-milling to furniture manufacture, have also been encouraged.

Furthermore, a process was underway in 2011 with the Department of Rural Development and Land Reform, to dispose of the remaining shareholding in four privatised forestry companies to the communities surrounding Safcol's forestry operations.

Also, as approximately 61% of land under Safcol's operation is subject to land claims, the department is playing a proactive role in facilitating the resolution of these claims through effective interdepartmental cooperation.

In 2010/11, while not dependent on the fiscus, Safcol was reliant on cash reserves and limited usage of debt finance. A key focus for 2011/12 was on ensuring improved financial and commercial sustainability.

Komatiland Forests (KLF) owns and manages the prime softwood sawlog forestry assets in Mpumalanga, Limpopo and KwaZulu-Natal. It consists of 18 plantations covering a total area of 187 320,27 ha. Its main business is forestry, timber harvesting, timber processing and related activities. The plantation stock consists

of approximately 91% pine, 7% eucalyptus and 2% acacia. KLF is one of the largest producers of high-quality sawlogs in South Africa. Its customer base includes the Timbadola Sawmill, a sawmill run by KLF, and other large as well as small processors in and around its plantations.

KLF's research centre and nursery manage various trial plots in plantations across Limpopo, Mpumalanga and KwaZulu-Natal. The nursery produces plants for all plantations operated by KLF. At an in-house training centre, Platorand, outside Sabie, various forestry-related training courses for students and employees are presented.

Industry and exports

The industry was a net exporter of almost R3,9 billion worth of goods in 2010, of which more than 99% took the form of converted value-added products.

The forest products industry ranks among the top exporting industries in the country, having contributed 2,27% to total exports and 1,61% to total imports in 2010. Capital investment in the industry amounted to an estimated R45 billion in 2010.

The value of forest-product exports grew by 53% over the past decade, from R8,7 billion in 2000 to R13,4 billion in 2010. In real terms, however, (taking inflation into account) this growth was -14% over the period in question. The net trade balance in foreign trade in forest products decreased from 2000 by - 22% in nominal terms (- 56% in real terms) to R3,9 billion in 2010.

In 2009, paper products were the most important exports (R6 139 billion or 42% of the total), followed by pulp (R4 643 billion or 34%), solid wood products (R2 573 billion or 21%) and other products (R330 million or 3%). Woodchip exports, mainly to Japan, accounted for 61% (R1 578 billion) of total solid-wood product exports.

As with other export-based industries, the global economic crisis combined with the strength of the Rand negatively effected the Rand-value of forest-product exports, with the total value of exports in 2009 (R12,5 billion) being R1,3 billion less than in 2008. Exports in 2010 showed an improvement, with sales of R13,4 billion being recorded. Increased demand from Asia, particularly Japan, was expected to bode well for export demand in 2011.

Stringent environmental codes of practice are implemented in all plantation and processing activities. The Chief Directorate: Forestry of the Department of Agriculture, Forestry and Fisheries promotes optimal development of forestry and arboriculture in South Africa. The National Forests Advisory Council (NFAC) was established in terms of the National Forests Act, 1998. It 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 (SFM), and makes recommendations on how public access to state-owned forests can be improved.

Achieving sustainable forest management

Apart from ecological considerations in determining where it is appropriate to grow trees, there are ecological, social and economic considerations that must be addressed when growing trees.

These criteria, indicators and standards form the basis for monitoring the sustainability of forestry operations in commercial and natural forests. Managers and owners are required to report against these criteria, which also form useful guidelines for new entrants to the sector.

The commercial forestry industry in South Africa is committed to practising SFM and is a world leader in forest certification. Over a million hectares, or over 80% of the entire planted area of commercial forestry plantations in South Africa, are certified by the Forest Stewardship Council (FSC) and the ISO 14001 certification schemes as being sustainably managed. By the end of 2009, 1 572 568 ha of plantation forestry land (planted and conservation areas combined) in South Africa were certified by the FSC, the second-largest area in the southern hemisphere after Brazil.

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 carried out.

There has also been a large increase in the number of non-corporate growers who have become certified. This can be attributed to fac-

tors 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.

As part of its commitment to the practice of SFM, the forestry industry is also involved in the NFAC's Committee for SFM, which develops criteria, indicators and standards for SFM, tailored to meet South Africa's specific conditions. The industry, in conjunction with the Department of Agriculture, Forestry and Fisheries, is also involved in an FSC national initiative, the result of which will be the acceptance and use by FSC auditors of criteria, indicators and standards for SFM which take into account South African conditions. These were field-tested and finalised during 2009.

The indigenous forests of the southern Cape received FSC-certification – a first on the continent for high forests. This represents a major step towards the sustainable management of the country's natural forests.

Legislation

The National Forests Act, 1998 reflects the vision for the future of forestry in South Africa. This vision emphasises SFM, and explains how people and communities can use forests without destroying them. The Act sets out rules for protecting indigenous forests, and ensures 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 a total of 47 species are protected under the Act.

Protected trees may not be cut; damaged or destroyed or possessed; collected; removed; transported; exported; purchased; sold; donated or in any other manner acquired or disposed of except under a licence granted by the Minister or in terms of an exemption.

The listing of protected trees is not primarily aimed at preventing the use of such trees, but rather at ensuring sustainable use through licensing-control measures.

In terms of the National Forests Act, 1998, all natural forests are protected. A policy was drafted to guide decisions on land-use change affecting forests, implemented by regional staff with scientific and legal support. The aim of the policy is to reduce development impacts on natural forests.

The National Veld and Forest Fire Act (NVFFA), 1998 (Act 101 of 1998), is the primary piece of legislation regulating veldfire management in the country. The purpose of the NVFFA, 1998 is to prevent and combat veld, forest and mountain fires (veldfires) throughout South Africa. The NVFFA, 1998 provides for a variety of institutions, methods and practices for achieving the purpose. This Act places an individual duty on every landowner where there is a risk of veldfire 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.

The NVFFA, 1998 provides for FPAs for two reasons:

- Veldfires often become emergencies because they threaten life and assets on the property where they have started, or when they spread, or threaten to spread, beyond the boundaries of any one property.
- Cooperation is needed to manage the conditions that determine their occurrence, to prevent and control veldfires, and to use controlled burning for environmental and other purposes. By April 2011, the department had registered 219 FPAs countrywide, covering approximately 600 000 km^2 (58 million ha), which is approximately 49% of the country's total land cover of the country.

The following are among the activities undertaken by the Department of Agriculture, Forestry and Fisheries on an ongoing basis to support FPAs in implementing their business plans:

- developing the National Fire Danger Rating System
- developing applicable policies, guidelines and regulations required for the effective implementation of the NVFFA, 1998
- compliance and enforcement
- building capacity and awareness
- providing training
- facilitating cross-border fire-management agreements.

The department continues to work with all stakeholders involved in integrated veldfire management to reduce the risk posed by veldfires.

Indigenous forests

Indigenous forests are indispensable to the country's heritage, beauty, wildlife and environment, while commercial forests provide jobs and economic opportunities for many people, especially in rural areas. Forestry represents a substantial investment in the country and plays an important role in the CRDP.

Plantations cover about 1,3 million ha of South Africa. Over 80% of these are found in Mpumalanga, KwaZulu-Natal and the Eastern Cape. They produced over 219 million m^3 (or 16,2 Mt) of commercial roundwood, worth R6,7 billion, in 2009.

Natural forest cover is low, which has led to the development of the commercial forestry sector in South Africa over the last 100 years. Nonetheless, natural forests have continued to play a major role in the livelihoods and well-being of many rural communities.

There has been an increase in the use of natural forests as sources of medicine, building material, fuel wood and food. An estimated 80% of South Africa's population still uses medicinal plants, most of which are sourced from natural forests. South Africa now has a detailed inventory of all its natural forests, which is used to monitor changes in forest areas.

The former Department of Water Affairs and Forestry completed a forest-type classification for natural forests, which are represented by 24 broad forest types. The Natural Forests Protected Areas System, completed for all forests in 2004, guides the setting aside and demarcation of natural forests as protected areas.

Systematic timber harvesting occurs in areas of the production-management class of the 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^3 of round logs are harvested annually (150 m^3 of stinkwood, 750 m^3 of yellowwood, 2 500 m^3 of Australian blackwood and 350 m^3 of other species). Another valuable product of the indigenous forests is the seven-week fern *(Rumohra adiantiformis)*, harvested in the Knysna and Tsitsikamma forests.

The South African market for this fern is considerable and reaches its peak in September, when sales exceed 420 000 bunches.

Woodlands

Savanna woodlands are dominated by trees, but not to the extent that the canopies are continuous and overlapping. The estimated extent of savanna woodlands cover varies from 29 to 41 million ha (roughly more than a third of the country's land cover), depending on the extent of wood cover considered to be woodland.

This vegetation covers extensive areas in the low-lying, drier areas of Limpopo, KwaZulu-Natal and Mpumalanga. Rich biodiversity is found in savanna woodlands (5 900 plants, 175 mammals and 540 birds), including iconic species such as the Big Five that are important to the tourism industry. Several protected tree species of the savanna, such as camel thorn and leadwood, contribute substantially to the lucrative braaiwood market, and guidelines have been set for licensing processes to assist with the control of their use.

Savanna 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, however, 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 is worth some R1,1 billion a year to rural communities.

Kathu Forest in the Northern Cape is the first woodland area to be declared a protected woodland under the National Forests Act, 1998. There are 87 savanna woodland types, and although the biome as a whole is fairly well protected in formal and private reserves, many underprotected savanna types have been identified. They must be prioritised for inclusion in future protected areas.

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

During the 1930s, government began establishing extensive plantations to make South Africa self-sufficient in its timber requirements, and to provide more job opportunities in a diversified economy during the Depression. Commercial plantations of exotic species proved to be a sound investment and the private sector established large plantations of pine, eucalyptus and wattle trees.

By mid-2009, the private sector owned 1 058 908 ha (or 83%) of the total plantation area of 1 274 869 ha, and virtually all the processing plants in the country.

The remaining 17% (215 961 ha) was under public ownership, although this figure includes KLF, the remaining Safcol package. The extent of public ownership has decreased significantly in recent years because of restructuring.

In 2009, capital investment in these plantations stood at R24,8 billion, 59% of which was attributable to investment in trees. A further 19% was tied up in land, 13% in roads, 6% in fixed assets and 3% in machinery and equipment.

Plantation yields

Of the 1 274 869 ha of plantations in 2009, 51% comprised softwood species and 49% hardwood species. Some 34% of the plantation area was managed mainly for sawlog production, 57% for pulpwood and 5% for mining timber, while the balance of 4% was grown for the production of poles, matchwood (poplar) and other minor products.

Plantation yields vary from an average of 16 m^3 per ha per year for softwood, to 21 m^3 per ha per year for eucalyptus and 10 m^3 per ha per year for wattle (timber and bark).

Likewise, the rotation ages vary from a maximum of 30 years in the case of pine sawlogs, to six to 10 years in the case of eucalyptus pulp and mining timber. Production from plantations amounted to 18,9 million m^3 (or 16,2 Mt) in 2009.

Primary wood-processing

In 2010/11, South Africa had 192 primary wood-processing plants, 188 of which were owned by the private sector and the remainder by local and state authorities. Of these, 108 were sawmills; 16 were mining-timber sawmills; 47 pole-treating plants; 16 pulp, paper and board mills; one match factory; and four charcoal plants.

The total roundwood intake into these processing plants in 2009 was 18,5 million m^3, valued at R6,7 billion.

The value of sales of timber products produced by these primary processing plants totalled R20,4 billion. Some R15,7 billion was invested in primary roundwood-processing plants (at book value). At market value, this increased to an estimated R45 billion.

The pulp industry in South Africa is dominated by two main pulp-and-paper manufacturing companies, Sappi and Mondi. They rank among the largest in the southern hemisphere.

The sawmilling industry produces sawn timber, which is used in producing solid-wood products, such as lumber for roof trusses and flooring, and consumer products, such as furniture. The furniture industry consumes about 283 000 m^3 of mainly industrial timber.

A large number of companies operate in this sector, with the five biggest companies contributing 51% of total production. Some 49% of total sawn timber is produced in Mpumalanga.

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 priority fields of research include tree-breeding through applied silviculture, climate and soils, environmental impact and management solutions, forest biology, hydrology and forest protection.

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 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 (FP&M) Sector Education and Training Authority (Seta), formerly the Forest Industries Education and Training Authority (Fieta), is among other things, responsible for ensuring that the training undertaken by the industry meets certain quality standards.

The department, together with the FP&M Seta, offers bursaries to students who choose to study in the forestry field.

The Fieta ceased to exist in April 2011 – it was amalgamated with the Clothing, Leather, Textile and Footware Seta and the Publishing, Packaging and Printing parts of the Media, Avertising, Publishing, Printing and Packaging Seta into the FP&M Seta.

Community forestry

The *White Paper on Sustainable Forest Development in South Africa* states that community forestry is designed and applied to meet local social, household and environmental needs and to favour 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 management 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 (PFM) of the Department of Agriculture, Forestry and Fisheries is an integrated approach that contributes to achieving the SFM of South African forests.

Elements of PFM were initially developed for indigenous state forests. However, the aim is to use PFM 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.

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 a healthy and sustainable quality of life for all, 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. By August 2011, the FTFA had planted more than 4,1 million trees, facilitated over 2 500 organic food gardens for the poorest in South Africa and launched the first carbon calculator and the Carbon Standard (now the Carbon Protocol) in this country.

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

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

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 South African coastline covers more than 3 200 km, linking the east and west coasts of Africa. South Africa's shores are particularly rich in biodiversity, with some 10 000 species of marine plants and animals having been 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 South African fishing industry, which was once concentrated in the hands of a few, largely white-owned companies, has undergone intensive transformation over the past 10 years.

The country also has a well-developed fisheries management system and is one of the world's leading countries in the implementation of an ecosystem approach for fisheries management. South Africa plays an important role internationally in the regional fisheries management organisations and regional programmes such as the Benguela Current Commission and other related programmes.

The programme aims to promote the equitable and sustainable management and efficient use of marine living resources.

The South African coast provides substantial opportunities for economic and social development. However, it is a resource threatened by inappropriate development, pollution, poaching and over-use. The sector has two components, the wild capture and the aquaculture sectors. The department plans to look at the economic prospects of marine culture, namely the husbanding and harvesting of sea plants for economic purposes.

The department plans to reduce the degradation of the marine environment through policies that promote conservation and sustainable use of marine-living resources. It also aims to restore and maintain productive capacity and biodiversity of the marine environment and protect human health.

The projected increase in demand for high-end fisheries products provides an opportunity for substantial increases in aquaculture production.

South Africa's commercial fishery industry is valued at some R2 billion annually and employs about 27 000 people.

Total annual fish production from marine fisheries exceeds 600 000 t. Given the market trends, South Africa's environmental potential for aquaculture and the state of development of its industry, production could grow from 3 543 t (worth R218 million) to more than 90 000 t (worth R2,4 billion) over the next 10 to 20 years.

The fishing industry has an annual turnover of about R80 billion and contributes 0,5% to the GDP.

As of July 2010, the commercial harvesting of abalone was opened to allow fishing communities to derive a livelihood from the sea. The opening came with multifaceted conditions to ensure that social, economic and security plans and structures were in place to support communities, especially along the entire south-western and west coast of South Africa.

With the implementation of the Abalone Recovery Strategy, abalone farming is set to increase significantly, relieving pressure on wild abalone stocks.

The Department of Agriculture, Forestry and Fisheries undertook a comprehensive review in 2010 in support of the sustainable use of the marine resources and as part of the process of developing the Integrated National Fisheries Development Plan to address the challenges of sustainability. This plan is also expected to support the departmental action plan towards achieving the Industrial Policy Action Plan.

The department supports the adoption of sustainable aquaculture that benefits the poor, through its commitment to investing in infrastructure and skills transfer to the amount of R150 million over the 2010/13 period.

Fisheries 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 Working for Fisheries Programme.

This enabled the department to deploy 60 military veterans in the Overberg region to serve as the "eyes and ears" of government.

Since re-opening the abalone fishery in July 2010, by mid-2011 with the support of communities and law-enforcement agencies, 25 boats and 20 vehicles used in abalone poaching had been seized and 240 arrests made. After many years of decline through poaching, the West Coast rock lobster stocks are showing signs of recovery.

The fishing sector comprises large-scale operators as well as small-scale, artisanal or even recreational fishermen and women. In its efforts to regulate and support women, the department had finalised the Small-Scale Fisheries Policy, through which it 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.

Aquaculture

Aquaculture is a growing source of food in many countries. The department developed the national Aquaculture Development Programme and Strategic Framework, which is aimed at creating jobs and wealth, as well as increasing productivity and sustainability in the fisheries and aquaculture sectors.

The Department of Agriculture, Forestry and Fisheries initiated the Aquaculture and Rural Livelihoods Programme, which is formulated to assist in developing provincial aquaculture strategic plans, revitalising state hatcheries and training aquaculture extension officers. The department initiated a regional capacity-building programme for state veterinarians at Rhodes University in the Eastern Cape in Aquatic Animal Diseases Diagnostics and Management.

In 2011, the department launched a state-owned abalone hatchery costing R15 million, through which 200 jobs will be created. In collaboration with the Chinese Government, the department is finalising the Gariep Dam Aquaculture Demonstration Centre in the Free State.

A financial commitment of R6 million had been made for the construction phase of the project, and another R40 million had been committed by the Chinese Government.

The development of the Qolora Aquaculture Development Zone (ADZ) in the Eastern Cape had been proposed to facilitate growth of the subsector. This area is situated approximately 60 km from East London. In 2011, the department committed R20 million to this project.

The Hamburg area of the Eastern Cape has also been identified as a specific location where intervention is required. The department invested R10 million towards the revitalisation of an oyster farm in the area and the establishment of a kob (kabeljou) fish-farming project, which is expected to produce up to 10 tons of fish a year.

The local community will benefit through the transfer of technology, skills development and the creation of approximately 60 direct jobs.

The department submitted a proposal to the Western Cape Provincial Department of Human Settlements to facilitate the development of the Silwerstroom Strand ADZ. Consultation with the custodian of the land had taken place and a Letter of Consent obtained. The department commissioned an environmental impact assessment as a final stage before implementation in June 2011.

Acknowledgements

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