

Surplus food from farms and firms onto forks

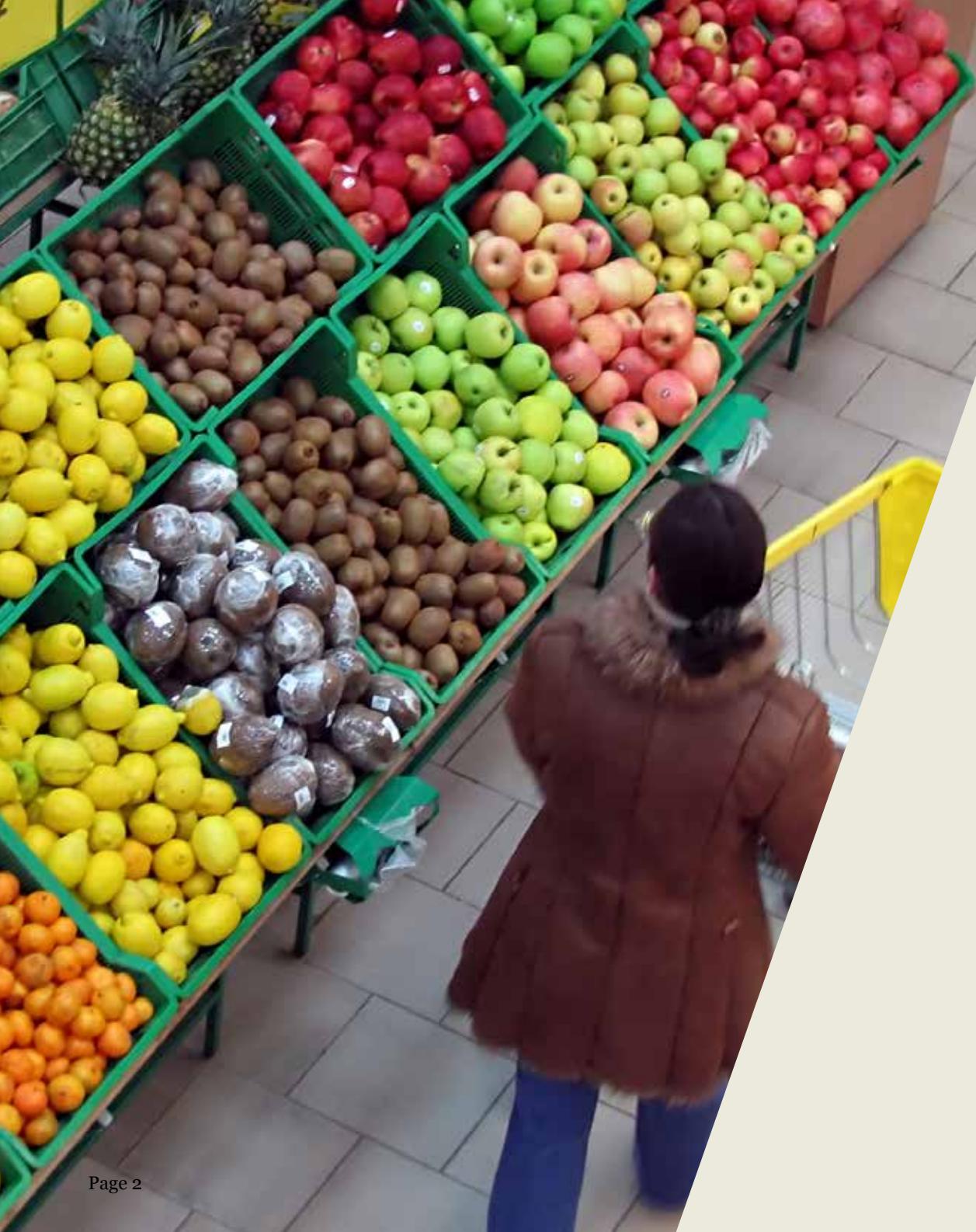
Emerging climate-smart business opportunities

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A snapshot of the opportunity

Farmers, fresh produce markets, food manufacturers and food retailers routinely generate surplus foods. Much of this ends up as waste. If diverted in time, a sizeable share of this food can instead be redirected for human consumption, helping to alleviate hunger, and creating several benefits for the generating firms. Redirecting surplus food will also avoid the loss of significant amounts of energy, water and financial capital embedded in wasted food, and the greenhouse gases resulting from its decomposition at landfills.



The case for investment

- **Cost savings:** farmers and food firms can:
 - Generate an income by selling surplus food
 - Benefit from tax savings from donations
 - Avoid gate fees at waste destinations.
- **Convenient solution:** food firms can avoid having to:
 - Remove and recycle packaging
 - Sort and transport surplus food because it is all removed from the site.
- **Conscience:** farmers and food firms can:
 - Establish a Social Licence to Operate
 - Gain marketing benefits.



The market

- **Producers' market size:** more than 5 000 food and beverage manufacturers, five major grocery retailers, four major fresh produce markets and 27 000 farmers generate surplus food.
- **Demand:** 13 million South Africans routinely experience hunger.
- **Surplus food organisations:** a few obsolete stock retailers exist, as well as many not-for-profit organisations that serve meals to hungry people.



Socio-economic benefits

- **Public health benefits:** surplus food donations can augment other initiatives to address hunger and malnutrition.
- **Redirection of resources:** donated food allows charities to direct financial resources elsewhere.
- **Enterprise development:** opportunities exist in food training, transportation, preparation, manufacturing and retail.



Climate change benefit

- **Reduce greenhouse gas emissions:** 17 400 tonnes of greenhouse gas emissions were avoided as a result of Food Forward's 4 400 tonnes of surplus food donations in 2017/8. This includes savings from both farm and retail production and distribution emissions, and the waste emissions associated with disposal at sanitary landfill. Food Forward works with the largest volume of surplus food donations in South Africa. What it redistributes is a tiny fraction of what is possible.



Redistributing surplus food

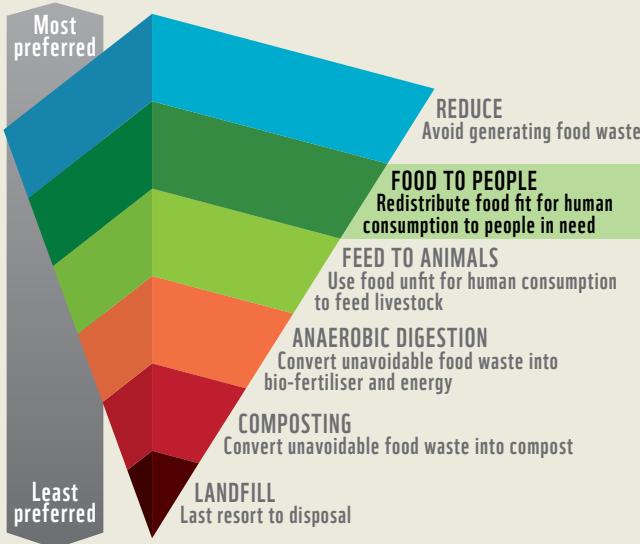
Surplus food is food that is not ‘true waste’. It is still perfectly edible and safe for human consumption but exists for example because it has failed to meet aesthetic specifications, or is past its ‘sell by’ or ‘best before’ dates.

Despite being suitable for human consumption, surplus food is often treated as waste. For this to be avoided, surplus food must be separated at the point at which it is considered not ‘fit for sale’ via traditional channels, and redistributed before it deteriorates.

**1/3rd
of the world's entire
food production is
wasted – 4 times more
than the amount needed to
feed all the malnourished
people worldwide¹**

Framing edible food waste as surplus food reorients the discussion towards the potential of this food as food for human consumption, not as an energy source, animal feed, compost or a waste.

Food waste hierarchy²



Farms and firms should adhere to the food waste hierarchy approach. In practice this is not always the case.

Why and where is surplus food generated?

Surplus food is generated throughout the food value chain, from farm to fork. The main reasons for this relate to:

- Labelling that artificially reduces product life; aesthetic specifications and standards; over-production, over-ordering and over-stocking; and damages to packaging or to the product.
- Produce on farms can be highly variable resulting in a large supply of a few fresh commodities at certain times, and none at others. In addition to crops, surplus food includes perishable, processed and non-perishable foods. The type, volume and composition of surplus food can vary greatly.³
- While the behaviour of separating out and redirecting surplus food from food waste is starting to emerge amongst certain firms (in particular, retailers), there remains significant scope for further uptake.

Surplus food strategies have great potential to augment existing food programmes and to reduce the costs of acquiring food for beneficiary organisations. However, given its high variability in both quantum and composition, surplus food alone is not sufficient to provide a regular, nutritional diet.

“ Surplus food might just comprise lettuce leaves, for which the beneficiary organisation may have no great need or use. ”

A leading grocery retailer, 2018

Percentage of food waste (by mass) that is generated at each stage of the food value chain in South Africa⁴



Food waste by consumers is by far the smallest share, at only 5%. In a hungry country, most people eat up everything. Research shows that affluent consumers give left-over foods to domestic workers and gardeners, street children, homeless people who come to their door, or to beggars when they are driving. Given this, the primary focus of surplus food strategies in South Africa should be on farmers and food firms, not on households.



What are global developments in surplus food?

Several high-level global agreements have relevance to surplus food redistribution. This includes the United Nations (UN) Sustainable Development Goals (SDGs), to which South Africa is a party.

SDGs that relate to surplus food



SDG 1: End poverty in all its forms everywhere.



SDG 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.



SDG 12: Ensure sustainable consumption and production patterns, including, "halve per capita global food waste at the retail and consumer level, and reduce food losses along production and supply chains by 2030".⁵

13 million
South Africans who
routinely experience hunger,
although access to food is a
Constitutional right

Examples of redistributed surplus food

- In Spain and France more than 118 000 and 100 000 tonnes of food are redistributed, respectively, each year.⁶
- In the UK, in 2015 an estimated 47 000 tonnes was redistributed from manufacturers and retailers.⁷
- Feeding America, an organisation representing 200 food banks, rescued 1,5 million tonnes of food in 2016 – about 2% of an estimated 72 million tonnes of wasted food in the US in that year.⁸

Examples of global policies and regulations⁹

- **The Bill Emerson Good Samaritan Food Donation Act:** Adopted in the US in 1996, with the explicit purpose of promoting food donations by limiting liability to intended misconduct or gross negligence.
- **Laws in Italy, Belgium and France require food firms to donate surplus foods:** In France, large supermarkets must donate all surplus foods or face hefty fines.
- **Official guidelines on durability of food:** Belgium has guidelines for assessing the conservation of food after it has reached or exceeded the date of minimum durability.
- **Fiscal incentives:** In France, food donors qualify for a tax credit.

Examples of technology supporting surplus food redistribution

- Blockchain is being explored to assist with the traceability of surplus food.
- Many smartphone apps target surplus food redistribution.

FoodCloud¹⁰

FoodCloud is a social enterprise currently operational in Ireland and the UK. It assists supermarkets, farms and food manufacturers to communicate via a smartphone app, volumes and types of surplus food being offered, and to coordinate logistics. It is used by 1 200 businesses and more than 3 600 charities and also offers direct services, such as collecting, storing and redistributing food.





What do we know about surplus food in South Africa?

Much of the surplus food in South Africa that is generated ends up as food waste because most farms and food firms do not consistently identify, remove, or redirect it. In 2013, food waste amounted to about **10 million tonnes** from an estimated 31 million tonnes of food available.¹¹

What South African legislation impacts on surplus food?

- **Waste legislation:** the landfill costs and bans associated with organic waste incentivise the diversion of food waste to other destinations, including surplus food destinations.
- **Date labelling:** definitions, interpretation and application artificially shorten food use.¹² In practice manufacturers, retailers and surplus food organisations are extremely cautious about food past its ‘sell by’, ‘use by’ and ‘best before’ dates even though these labels are more about marketability and quality, than food safety.

What are the impacts of wasting different food commodities?¹³



The meaning of date labels

Regulation 146 of the Foodstuffs, Cosmetics and Disinfectants Act 54 of 1972 specifies the application of a date of durability to food products. It defines the following terms:

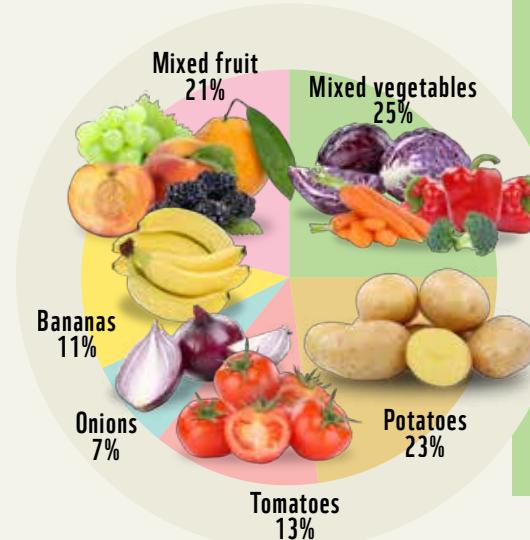
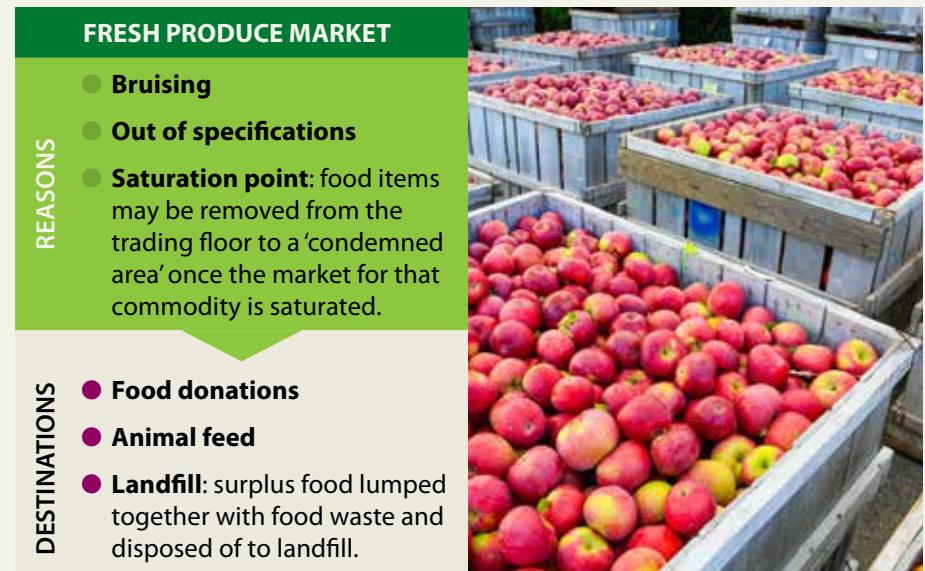
- **'date of minimum durability'** ('best before'/'best before end'): the end of the period the product must remain under stated storage conditions for it to continue to be completely marketable and to retain specific qualities. The food may still be 'perfectly satisfactory' beyond this date.
- **'sell by' or 'display until'**: the last date that the product can be offered for sale to consumers. Beyond this date there is still a reasonable storage period in the home.
- **'use by'** ('best consumed before', 'recommended last consumption date', 'expiry date'): the end of the period the product must remain under stated storage conditions. Beyond this the product will probably lose the quality expected by consumers and should be regarded as unmarketable.

Limiting liability

Currently under discussion by a number of government departments is a paper aimed at limiting strict liability for South African firms that donate surpluses.¹⁴

Typical reasons for surplus food generation and main destinations¹⁵

REASONS FARM		
	DESTINATIONS	FARM
<ul style="list-style-type: none"> Over-production: farmers grow more than has been ordered. Over-ordering: manufacturers or retailers place orders for more stock than they ultimately purchase. Bruising Out of specifications: food item does not meet the agreed to or expected requirements of the purchaser. Reasons might be aesthetic. 		
<ul style="list-style-type: none"> Ploughed back/ left to rot: surplus food is often ploughed back into the farm or left to rot due to costs associated with moving it and concerns regarding liability. Animal feed: pig farmers may use it to feed animals. 		



Cape Town Market:¹⁶ The only private fresh produce market in South Africa. About 280 000 tonnes of food a year passes through the market; of which around 1 300 tonnes a month is 'not fit for sale' (15 600 tonnes a year, or 5,6% of total). This 'not fit for sale' food is moved to a 'condemned food area' and divided into surplus food and true waste. Surplus food is then sorted by Food on the Table, a surplus food organisation, whose volunteers divide it into portions for distribution to about 45 charities. Left-overs are sorted into animal feed and true waste for landfill.

Composition of 'condemned' food at Cape Town Market

<p>PROCESSING/ MANUFACTURING</p> <ul style="list-style-type: none"> ● Out of specifications ● Short-dating: food at manufacturers or distribution centres is too close to labelled date to be sold by retailers. ● Return to vendor: item is returned because of contractual deviations, such as wrong order, product or packaging defects. Or, specifications not met. ● Broken cold chain: item is not stored at correct temperature which could compromise food safety. 	
<p>REASONS</p> <ul style="list-style-type: none"> ● Food donations: public reporting focuses on Corporate Social Investment food donations. It is likely that some of these donations are comprised of surplus foods. ● Staff sales ● Obsolete stock retailers ● On-site macerators ● On-site or off-site composting facilities ● Waste-to-energy plants using anaerobic digestors ● Landfill 	
<p>REASONS</p> <ul style="list-style-type: none"> ● Broken cold chain ● Over-stocking: to keep their shelves fully stocked, retailers may market more of an item than they can sell. This can lead to stock reaching its 'sell by' or 'best before' date. ● Reaches 'sell by' / 'best before' date ● In stores/ distribution centre damages 	<p>DESTINATIONS</p> <ul style="list-style-type: none"> ● Food donations: many retailers identify and redistribute some surpluses. ● Staff sales ● On-site macerators ● On-site or off-site composting facilities ● Waste-to-energy plants using anaerobic digestors ● Landfill
	<ul style="list-style-type: none"> ● Pick n Pay and Shoprite Checkers work with Food Forward. ● Woolworths' stores donate directly to local charities. ● Food Lovers Market works with both Food Forward and smaller charities.

Surplus food organisations

There are several organisations active in redistributing and selling surplus food in South Africa.

Examples of surplus food organisations

Foodeez is an obsolete stock solution for manufacturers, retailers and wholesalers. It purchases non-perishable goods that are short-dated, or foods that are damaged or over-produced from a range of South Africa's best-known food wholesalers and brands.

- Foodeez guarantees food companies that it won't advertise their brands or allow for follow-on resale in order not to undercut traditional sales channels for food items. To remove the risk of further on-selling, there are limits on the volumes sold per customers.
- Foodeez sells direct to consumers (mainly middle-class) through a network of retail stores in and around Cape Town. It has experienced considerable growth in recent years, and currently has five retail outlets, a warehouse, more than 60 staff, 17 000 Facebook followers and does 30 000 monthly transactions.



Food Forward (formerly FoodBank SA) was established in 2009 to address widespread hunger in South Africa.

- Food Forward operates nationally by recovering surplus food from retailers, manufacturers and farmers, so as to connect a ‘world of excess’ to a ‘world of need’.
- Their main suppliers by volume are Pick n Pay, Shoprite and Food Lovers Market. Food Forward provides Section 18A receipts to suppliers for their tax deduction purposes.
- Food Forward’s most recent innovation is **FoodShare** – a virtual technology platform which connects beneficiary organisations to collect surplus food directly from retailers and food outlets. By June 2018 it had already signed up 140 beneficiary organisations, and Pick n Pay uses this system for its surplus food donations.
- A dedicated truck collects surpluses directly from farmers – **Second Harvest**.
- In 2017, 600 registered beneficiary organisations received food from Food Forward. They expect to provide approximately 30% of the food required by beneficiary organisations – recognising that food donations alone cannot provide sufficient volumes or diversity of food for an adequate diet.
- Food Forward is exploring accessing surplus food direct from food outlets and the hospitality sector, and also scaling-up activities with major retailers.
- Value addition processes are being considered to increase the shelf-life of perishable foods and support associated enterprise development opportunities.

Food Forward’s impact in 2017¹⁷



14 500 000
meals per year



R0,86
cost per meal



4 350 000
kgs of food distributed



600 beneficiary
organisations supported

Comparison between not-for-profit and for-profit business models for surplus food

Characteristics	Not-for-profit	Obsolete stock retailers
Number	<ul style="list-style-type: none"> • Many with large variations in reach and formalisation (including emergency relief and school feeding) • 26 202 NPOs are registered under ‘social services’ with the Department of Social Services 	<ul style="list-style-type: none"> • Few (Foodeez is main player)
Food categories	<ul style="list-style-type: none"> • Perishable food • Non-perishable food 	<ul style="list-style-type: none"> • Mainly non-perishable food such as value-added products
Suppliers	<ul style="list-style-type: none"> • Mainly retailers 	<ul style="list-style-type: none"> • Mainly manufacturers
Market	<ul style="list-style-type: none"> • Poorer communities reliant on food donations 	<ul style="list-style-type: none"> • Middle-income consumers looking for good deals
Labelling	<ul style="list-style-type: none"> • Sticks to ‘use by’/‘best before’ dates 	<ul style="list-style-type: none"> • Will take after ‘best before’ non-perishables
Financial driver for supplier firm	<ul style="list-style-type: none"> • Section 18A tax receipt 	<ul style="list-style-type: none"> • Sales revenue – obsolete items are purchased
Infrastructure and capabilities	<ul style="list-style-type: none"> • Varies – depending on size and whether an intermediary or beneficiary 	<ul style="list-style-type: none"> • Trucks, refrigeration, stores, warehouses
Technology	<ul style="list-style-type: none"> • Increasingly important in connecting suppliers directly with beneficiaries 	<ul style="list-style-type: none"> • Facebook is main platform for communicating with market
Challenges	<ul style="list-style-type: none"> • Variable/ uncertain supply • Infrastructure • Funding • High reliance on donations • Nutritional requirements 	<ul style="list-style-type: none"> • Economy affects consumption demand • Variable/ uncertain supply • Infrastructure



**Worcester Farm–
Early Childhood
Development (ECD)
Surplus Food
Programme¹⁸**

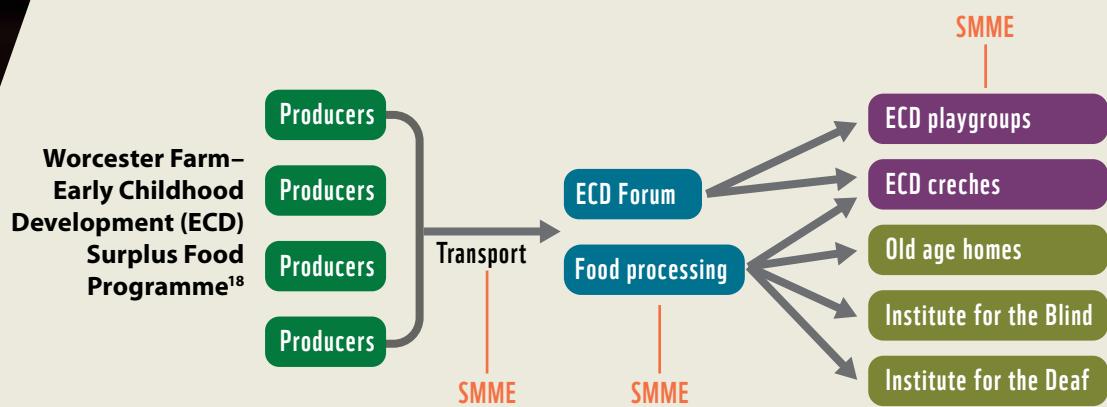
**Worcester Farm–Early Childhood
Development (ECD) Surplus Food Programme**

In the Worcester area in the Western Cape, on a weekly or fortnightly basis, a provincial Land Care official, operating with permission from that Department, collects a bakkie-load of surplus vegetables (typically potatoes, butternut, spinach, cabbage) from five to six farmers.

- This food is delivered to a central ECD forum where a WhatsApp group communicates its arrival to more than 60 local ECD centres.
- It is collected on a first-come, first-served basis.
- Cooks at the centres have received training in the preparation of nutritious meals.
- Excesses that are not absorbed by the centres are then directed to a number of other local organisations that are equipped to prepare and serve meals, such as the Institute for the Deaf, Institute of the Blind and old age homes.

A range of potential growth opportunities include:

- Working with more local farmers
- Enterprise opportunities in transport and food processing.



What is the potential of technology in surplus food in South Africa?

Several technology platforms are either in use or are being developed.

WhatsApp groups, for example: Worcester Farm-ECD Surplus Food Programme.

Smartphone apps, for example: Food for us, a UN programme administered by Rhodes University, is developing and trialling an app to divert surplus food from farms. Trials are taking place in Worcester, Stanford and surrounds in the Western Cape, and in the Raymond Mhlaba Municipality in the Eastern Cape.

Other technology platforms, for example:

- Food Forward's FoodShare and Second Harvest.
- Cape Farm Mapper, provides geospatial information on farmed commodities in the Western Cape. While it doesn't provide volumes, this aggregated and mapped data can assist with understanding the potential for surplus food of different farmed commodities, for particular districts and regions.





Size of the opportunity

Across the value chain and across the country, there exists a sizeable opportunity for firms to sell or donate surplus foods, rather than treating it as waste. In terms of developmental impact, in the short-term the **retail stage presents the greatest potential for extracting large and diverse volumes of surplus food:**

According to their annual integrated reports, in 2017, retailers donated surpluses valued as follows:

- Woolworths: R556 million
- Shoprite Checkers: R108 million
- Pick n Pay: R96 million.

There is potential for this to be scaled-up.

- Retailers account for a significant volume of food and already have demonstrated an appetite to donate surpluses.
- Retailers' food is already prepared and packaged for consumption and represents a diversity of food items which can better support nutrition, than single commodity producers.
- Retailers have a broad geographic reach.
- A small number of retailers dominate the market which allows for fewer surplus food partnerships and less coordination than with the many, smaller food firms.
- Retailers already have some data on surplus foods and are improving the level of detail and identification of surpluses in their operations.



Quantifying the potential at the grocery retail level

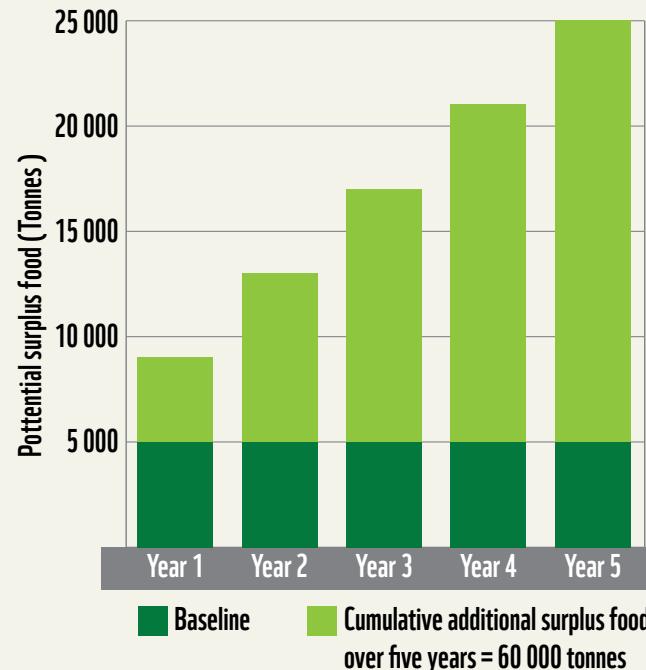
Currently Food Forward only receives surplus food from 6% of two of the main grocery retailers' stores, representing approximately 1 700 tonnes a year of surplus food.¹⁹

- Applying a constant ratio of surplus food per store estimates surpluses in the region of **28 333 tonnes** a year for the two retailers.
- Assuming that this tonnage represents 70% of all national retail stores' surpluses (noting that the three remaining retailers are smaller in reach), a total potential of about **40 000 tonnes** exists across the grocery retail sector each year.
- Assuming a baseline of 5 000 tonnes is already redirected for redistribution, and increasing this by 4 000 tonnes per annum, would result in a **cumulative additional amount** of redirected surplus food of 60 000 tonnes over 5 years, or 25 000 tonnes from retail grocery stores in Year 5.
- The 25 000 tonnes of surplus food from retailers in Year 5 is still **only 0,25%** of the 10 million tonnes of edible food that is wasted each year. This excludes the potential elsewhere in the value chain, such as scaling-up the existing Worcester Farm-ECD Surplus Food Programme.

“ We redistribute surplus food responsibly. We allocate food based on the size of a beneficiary organisation we serve. Regarding our Second Harvest programme, we need to think carefully about how we can extend the shelf-life of agricultural produce once we have distributed enough to all our beneficiary organisations, such as creating social enterprise opportunities using bulk post-harvest surplus. **”**

Andy du Plessis, Food Forward

Potential of surplus food amongst the main grocery retailers in South Africa (in tonnes)



Socio-economic benefits

For its 4 350 tonnes of food donated in 2017, Food Forward estimates 14,5 million meals were served.

Applying the same ratio of tonnes to meals:

- For each additional 4 000 tonnes that are redirected, an additional 12 million meals would be provided
- Or, just less than 33 000 meals a day in Year 1, doubling, tripling and quadrupling, as an additional 4 000 tonnes are added each year.

While surplus food organisations are keen to increase volumes of food they receive, they need to ensure that this food can be absorbed.

SMMEs, business opportunities and value addition

- Sometimes particular surplus food commodities are in over-supply and must be transformed to preserve their shelf-life. This presents bottling, dehydration and processing opportunities.
- There are training opportunities in food preparation, for example for cooks at beneficiary organisations.
- There are transport opportunities in connecting producers of surplus food to local beneficiaries.

Greenhouse gas (GHG) mitigation potential

The global carbon footprint from food waste is around 3.6 Gt (Gigatonnes) of CO₂e each year. In South Africa around 90% of overall waste is disposed of to landfills where it leads to the production of methane gas and carbon dioxide. Methane is a potent GHG, having 28-36 times more global warming effect over 100 years than carbon dioxide.

About CO₂e

To enable us to compare the warming effect of the 17 different GHGs, they are converted to a common basis called carbon dioxide equivalent – CO₂e – expressed as ‘carbon emissions’ for short.

The recovery and redistribution of surplus food reduces the GHG emissions associated with the food supply chain. From a life cycle perspective, it reduces the amount of food waste sent to landfill and avoids the need for additional food to be produced to meet the needs of the various beneficiaries.

As no overall data exists on surplus food and its emissions savings, a Food Waste Calculator was developed to estimate the GHG emissions savings

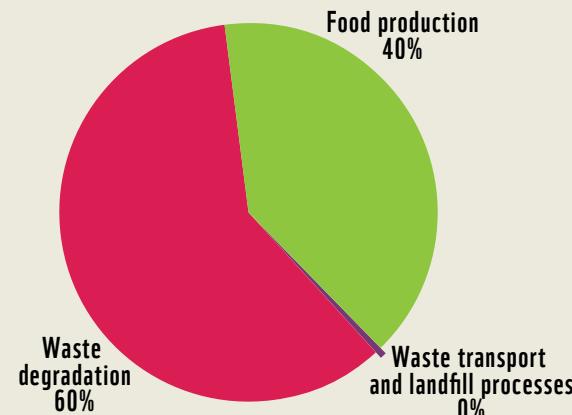
that can be attributed to Food Forward²⁰. Food categories and volumes provided by Food Forward were disaggregated and mapped to GHG food emission factors.

Between March 2017 and February 2018 Food Forward’s operations, involving the donation of 4 400 tonnes of food, are estimated to have saved **17 400 tonnes** CO₂e. This is equivalent to the emissions associated with:

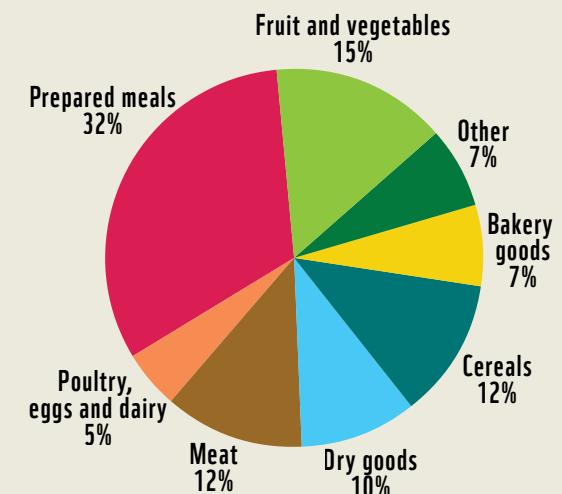
- 3 700 passenger vehicles driven for a year
- Or, the annual electricity usage of 6 000 South African households.

Just under 60% of the emission savings are from avoided waste degradation emissions, with most of the remainder associated with the cradle-to-retail emissions (the food production and distribution life cycle).²¹ This shows the substantial GHG effect of food waste in landfill.²²

Emissions savings from Food Forward’s surplus food donations



Share of Food Forward’s donated food groups to total avoided emissions



The share of the food groups to the total avoided emissions is a function of both the relative amounts of the different foods donated by Food Forward in tonnes, as well as the GHG intensity of their production. ‘Prepared meals’ have the highest contribution to emissions savings at 32%, despite accounting for only 8% of the food mass donated by Food Forward. In contrast, fruit and vegetables contribute 15% towards avoided emissions, but account for 28% of the avoided food waste.²³

Adopting the same factor of emissions per tonne and applying it to 10% of total food waste in the country (or approximately 1 million tonnes per annum) could yield an emissions saving of close to 4 million tonnes of CO₂e each year.

Barriers to surplus food redistribution

Food labelling, insurance claims, and liability concerns

- There are different interpretations of the legislation, particularly date labelling legislation. When in doubt firms err on the side of caution. As a result, food labelling can represent a retailer or manufacturer's own standards, rather than health standards.
- A claim from insurers for damaged stock might require a 'safe disposal certificate' and other formal landfill-related disposal records, even if the food remains edible.
- Many businesses, particularly manufacturers, are reluctant to risk potential liability as a result of health risks from surplus food redistribution. In practice this means they are very careful about which food can be rescued from waste streams. Meat, dairy and prepared foods in particular require careful management of the cold chain.

Traceability concerns

- Once the surplus food leaves the firm, it cannot be traced. This presents health risks as well as risks related to the illicit resale of food products.

Brand protection

- While donating surplus food has brand benefits, businesses are concerned about eroding their traditional markets and channels of sale.

Location, number and capacity of intermediaries

- Farmers in rural areas may not have access to surplus food organisations to remove produce from their farms.
- Manufacturers and retailers outside of urban areas may not be able to readily identify surplus food organisations.

Competition from destinations for food waste

- Inevitably some surplus food will get diverted into waste streams and for animal feed.
- In the future, surplus food redistribution activities could be undermined if these other destinations become more cost-effective than surplus food destinations, due to, for example, incentives or market prices for electricity or animal protein.

Data limitations

- Measurement of surplus food is difficult. Inadequate data limits actions to redirect surplus food prior to it ending up as food waste.

- Food waste is also not recognised in 'general waste' classifications at firms or at landfill, which limits the identification of what could be rescued as surpluses.

Dependency and stigma

- Firms are concerned about creating dependency and the expectations of surplus food in hungry communities.
- Beneficiaries may also experience stigma associated with donated surplus food – food rejected by firms, in other words.

Limited awareness

- Farms and firms have limited awareness of the potential of surplus food.
- There is also little awareness amongst consumers who could otherwise help drive change in firms through their market influence.

“Farmers don't have control over waste. It's not like manufacturing. There is a great group of farmers saying it's okay you can have, but its harvest season and they can't transport it. Convenience is critical.”

Rudolph Roscher, Western Cape Department of Agriculture



Drivers of surplus food redistribution

Cost savings

Food firms at the manufacturing and retail level, where large volumes of surplus food are generated, can derive several financial benefits from surplus food diversion from waste:

- Income from sales to secondary markets
- Tax benefits from donations, up to 10% of taxable income, against Section 18A receipts
- Cost savings on gate fees at various waste destinations.
- Cost savings on waste management, including sorting, packaging removal and transport.

Organic Waste Landfill Ban

The Organics Waste Landfill Ban to be put into effect in 2026 in the Western Cape is a major driver of the diversion of waste food from landfills. If identified early on, some of this food could be redistributed as surplus.

“In addition to other benefits, ease drives the business case – it’s easier if charities collect the food. Also, corporate conscience definitely benefits from food donations.**”**

Katy Hayes, Corporate Social Investment specialist, Woolworths

Cape Town offers a diverse set of possible destinations for food waste. Certain food retailers are already involved in pilot projects in the city which focus on waste-to-energy and composting. Gate fees vary depending on the quality and categorisation of incoming waste. In time, surplus food organisations may end up competing with these destinations.

Comparison of gate fees at destinations for surplus foods and food waste²⁴

Destinations	Gate Fees (2017/2018) per tonne ex. VAT
Surplus food organisations	None
Vissershok Municipal landfill site ²⁵	Up to R558,90
Vissershok private landfill site	Up to R542,57
Agri-protein plant	Up to R280,00
New Horizons Energy	Up to R350,00
Philippi Economic Development Initiative waste-to-food composting	R250,00 is the benchmark

Will gate fees track carbon tax rate?

A carbon tax, with a carbon offsets system, is to be implemented in South Africa from 2019; and from 2020, regulations will limit a company's emissions to an allocated carbon budget (allowance). Companies will not be held accountable for downstream emissions – rather landfills will be accountable for the emissions at their sites. The landfills may thus have an interest in driving waste diversion up their waste supply chain, by making their gate fees track the carbon tax rate.

Convenience/ease

- Intermediaries provide a convenient service when they pick up and remove **all** surplus food **in its packaging** from the food firm.
- Certain firms do not provide beneficiary organisations with any discretion – they must remove all the surplus food irrespective of its composition.

Conscience

- Certain businesses identify a moral commitment to ensure that surplus food is redistributed, in line with their Corporate Social Responsibility pledges and vision.
- There is a marketing and brand benefit to addressing hunger through Corporate Social Investment and surplus food programmes.

PHOTO: KAMAAL MARTIN



Action points

Significant potential exists to divert surplus food from becoming food waste. But this should not distract firms or government from addressing systemic drivers of ongoing poverty, and the prevalent patterns of unsustainable food production and consumption. More collaboration is required amongst firms, **and** between government, firms across the value chain, surplus food organisations and other parties interested in nutrition and addressing hunger.

Firms across the farm-to-retail value chain

- **Farmers** can support local area and other initiatives to redistribute post-harvest surpluses.
- **Manufacturers** can participate in research to better understand and identify surplus foods that are generated, as well as support redistribution of surpluses.
- More **retailers** and many more of their stores and distribution centres can support surplus food redistribution efforts.
- **Fresh produce markets** can invite surplus food organisations to set up shop, and sort and remove surplus produce from waste streams.

Unions

- Unions can support the work being done to redistribute surplus food to address hunger and malnutrition. They can support farmworkers to have a voice in the surplus food discussion.
- Unions can take up the potential enterprise development opportunities associated with surplus food (for example, in food preparation and value addition). This is also relevant for the Million Climate Jobs Campaign. This campaign investigates and advocates the job creation potential of businesses and activities that reduce carbon emissions and/ or build resilience to the impacts of climate change.

Surplus food organisations

- **Surplus food intermediary organisations** can ensure that they can support the responsible donation of food.
- **Beneficiary organisations** can develop the capacity to absorb the surplus food and turn it into meals.
- **New business models and innovations** are required in this fast evolving environment. One opportunity relates to setting up local area networks to link farmers and NPOs. In time, surplus food organisations may consider charging a modest fee for collection from retailers/ manufacturers, less than waste disposal fees. They could also consider providing a broad waste management service to ensure the effective diversion of surpluses from waste streams.

Policy-makers

- Landfill operators and municipalities can improve waste data collection and reporting on the volume, sources and characteristics of the food waste component at landfill. This information will help to establish strategies to divert this food to surplus food activities prior to it degrading.
- Policy-makers can ensure that incentives created for technologies to address food waste do not negatively impact on surplus food volumes and potential. Gate fees, volumes and trends in this regard should be monitored. A directive requiring firms to allocate surplus food towards human consumption, and not animal feed or waste streams, should be investigated.
- Clarity and finality is required on carbon budgets and taxes for firms.
- Guidelines can be introduced to assist surplus food organisations with their responsible use of surplus food, as in the case of Belgium.
- Enacting ‘Good Samaritan’ legislation can encourage firms to donate surplus food.

Research houses

- More research is needed, particularly amongst farmers and manufacturers, to understand what systems and networks are required for the identification and redistribution of surplus food. Technology can help with this effort.
- A range of research institutions already exist in the food and agriculture space. It is important to link and locate surplus food research within the various other strands of agriculture and food research taking place around the country.

Insights from industry

In March 2018 WWF South Africa hosted a workshop to explore the business case for firms to redistribute surplus food. Present were close to 20 stakeholders, including national and provincial government, GreenCape, grocery retailers (Pick n Pay, Woolworths and Food Lovers Market), a large food manufacturing firm and Cape Town Market. Surplus food organisations also attended – including Foodeez, Food Forward, and Food on the Table.

The discussions focused on the drivers of the business case and the potential to increase surplus food redistribution. Key points included:

- A key driver of the business case for firms would be the ease of dispensing with surplus food.
- Farmers don't have the resources to undertake surplus food redistribution themselves and it is often ploughed back into the fields, or rots on farms.
- Surplus food programmes could form part of a food security strategy but should not replace other important efforts to achieve food security.
- The lack of reliable and transparent data on food waste and surplus foods makes it hard to understand the potential. Establishing a baseline is important.
- More collaboration is required amongst firms, and then between firms and other role-players to realise the opportunities for surplus food.



Endnotes

1. Barilla Centre for Food and Nutrition. 2017. Online: <https://www.barillacfn.com/en/dissemination/paradox/>.
2. Facchini, E., Iacovidou, E., Gronow, J. & Voulvoulis, N. 2017. Food flows in the UK: the potential of surplus food redistribution to reduce waste, *Journal of the Air & Waste Management Association; Deloitte. 2014. Comparative Study on EU Member States' Legislation and Practices on Food Donation.*
3. Hawkes, C. & Webster, J. 2000. *Too Much and Too Little? Debates on Surplus Food Redistribution.*
4. WWF, 2017. *Food Loss and Waste: Facts and Futures.*
5. Sustainable Development Goals. 2015. Online: <http://una-gp.org/the-sustainable-development-goals-2015-2030/>.
6. Webster. 2014. Britain shamed over supermarket waste. *The Times Newspaper.* Online: www.thetimes.co.uk/article/britain-shamed-over-supermarket-waste-v239qmcv6mr.
7. WRAP. 2017. *Estimates of Food Surplus and Waste Arisings in the UK.* Online: http://www.wrap.org.uk/sites/files/wrap/Estimates_%20in_the_UK_Jan17.pdf.
8. Feeding America. 2018. Online: <http://www.feedingamerica.org/>.
9. Deloitte. 2014. *Comparative Study on EU Member States' Legislation and Practices on Food Donation.* Online: <https://www.eesc.europa.eu/agenda/our-events/events/food-donation-fighting-food-poverty-and-addressing-food-waste>.
10. FoodCloud. 2018. Online: <https://food.cloud>.
11. Nahman, A., de Lange, W. 2013. *Costs of Food Waste along the Value Chain: Evidence from South Africa.* Waste Management.
12. The food regulations under the Foodstuffs, Cosmetics and Disinfectants Act define food durability, while a Consumer Goods and Services Ombuds Advisory note clarifies the interpretation of 'best before', 'sell by' and 'use by' date on food products.
13. WWF, 2017. *Food Loss and Waste: Facts and Futures.*
14. Nastascha Harduth. 2017. *Discussion Paper Proposing a Legal Framework: Food Donations as a Mechanism to Limit the Wastage of Surplus Food, Food Insecurity and Malnutrition.*
15. Authors interviews with firms and intermediaries. 2017-2018.
16. Authors interviews and correspondence with Cape Town Market, 2017-2018.
17. Food Forward South Africa. 2017. Annual Report.
18. Rudolph Roscher. 2018. Slide from presentation at WWF Surplus Food Workshop, 16 March 2018.
19. Author's discussions and email correspondence with Andy du Plessis, Food Forward South Africa. 2018.
20. The Greenhouse. 2018. Estimate of the GHG emission reductions due to Food Forward SA operations.
21. It is assumed that food that has been donated would otherwise have been disposed of to landfill, and furthermore, that the majority of landfilling of food waste is in properly managed sanitary landfills.
22. An alternative waste disposal scenario in which it is assumed that all the fruit and vegetables are composted rather than landfilled decreases the emissions savings by 15% to 14 700 tonnes CO₂e.
23. The Greenhouse. 2018. Estimate of the GHG emission reductions due to Food Forward SA operations.
24. Private communication with Mark Lyons, Derek Veldman, GreenCape, Jacques Roger, March and April 2018.
25. City of Cape Town Solid Waste Tariffs. 2017. Online: <http://resource.capetown.gov.za/documentcentre/Documents/Forms%20notices%20tariffs%20and%20lists/CCT%20Solid%20Waste%20Disposal%20Tariff%20Letter.pdf>.



Building a sustainable and equitable future. FOR NATURE. FOR YOU.

The climate change mitigation debate in South Africa needs to move from improving efficiency within a projection of the existing economy, to innovation and options beyond the constraints of the current dispensation and structure of the economy. It may take step changes in the development path to achieve mitigation adequate to South Africa domestic and international commitments, and to maximise economic development and social wellbeing. Business models presently unconsidered may be waiting in the wings.

The 'Low-carbon development frameworks in South Africa' project seeks to deepen understanding of, and reveal opportunities for, transitions to a low-carbon economy. It facilitates and develops contributions at the intersection of climate change mitigation, economic development and socio-economic dimensions, across immediate, medium and long-term horizons.

Working variously with government, business and labour, the project reaches from providing input to emerging government mitigation policies and measures; through investigating the business and socio-economic case for selected mitigation initiatives which hold growth potential in energy, transport, industry, waste, and land use; to analysing potential future economic trajectories and the systemic opportunities offered by these.

The project is funded by the International Climate Initiative (IKI) of the Federal Ministry for the Environment (BMU) of Germany, and implemented by WWF South Africa.

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To stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature.

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WWF's Policy and Futures Unit undertakes enquiry into the possibility of a new economy that advances a sustainable future. The unit convenes, investigates, demonstrates and articulates for policy-makers, industry and other players the importance of lateral and long term systemic thinking. The work of the unit is oriented towards solutions for the future of food, water, power and transport, against the backdrop of climate change, urbanisation and regional dynamics. The overarching aim is to promote and support a managed transition to a resilient future for South Africa's people and environment. The organisation also focuses on natural resources in the areas of marine, freshwater, land, species and agriculture.

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