



AWARDS AND RECOGNITION

CHEMICALS DIVISION

Protea Chemicals was the runner-up for the 2015 Responsible Care® Innovation Award for the following project:

The Chemicals division identified a need to increase its solvent storage capacity. However, several concerns with its existing above-ground bulk solvent storage facility were identified which led to management re-evaluating its needs and impacts. This resulted in the redesign and re-engineering of the existing facility. Factors that influenced this decision included the improvements that could be made such as:

- Reducing potential environmental impacts: spillages when offloading and/or filling needed to be reduced
- Reducing emissions from vehicles, and reducing risk to employees: a lack of space to increase storage capacity led to increased deliveries and collections and more risk as there was more traffic. Improving product accuracy: the manual filling at the bulk storage facility could potentially result in under- or overfilling of orders that in turn could lead to customer formulation inaccuracies

A decision was therefore made to install underground bulk tanks for the storage of solvents. The project was managed internally by Omnia's engineering team and reputable suppliers.

The R5 million project, that took several months to complete from its inception in April 2013 to the decommissioning of old tanks in February 2014, entailed the installation of high quality lining, monitoring wells and other state of the art equipment to prevent, detect and contain any potential leakage from the newly installed bulk underground solvent storage tanks, and to prevent soil and/or groundwater contamination. Furthermore, automated pumps were installed to eliminate the risk of potential over or under-filling of customers' orders. A huge downward trend of vehicles on-site was observed, as the solvent storage capacity as well as vehicle manoeuvrability increased, resulting in less frequent deliveries. Vehicle flow is now better controlled and monitored, resulting in a lower risk of vehicle and/or employee incidents.



AGRICULTURE DIVISION

FERTASA (Fertiliser Association of Southern Africa) recently introduced a voluntary certification scheme whereby its members can be independently audited and certified for compliance to FERTASA's Code of Conduct. Responsible and effective manufacturing, warehousing and distribution are tested against FERTASA standards and legal requirements. Products bearing this FERTASA seal of approval are quality tested and assured.

Omnia Fertilizer was one of the first companies to achieve FERTASA certification, underlining its principles of ethical business practices and promoting a culture of integrity and trust. Omnia Fertilizer proudly carries the seal of certified credibility, with products supported by scientifically based services and continual learning and improvement.

SOCIAL RESPONSIBILITY

AGRICULTURE DIVISION

1. The Grain Production Commercial Project

Omnia plays a vital role in advancing emerging farmers, through this initiative. This project covers four provinces: Mpumalanga, Eastern Cape, Free State and North West where a total of 13 040 hectares of maize, sunflower, dry beans, sorghum, and soya was planted. There are 72 beneficiaries participating in the scheme all of whom are being mentored to become bankable farming enterprises.

NORTH WEST

Omnia has partnered with NWK Limited in a farmer development scheme for the past 10 years to provide support to emerging farmers in the North West province. There are 22 farmers who have received fertilizer, training and support services.

FREE STATE

Omnia continues to form collaborative partnerships with like-minded companies and organisations that support emerging farmers, such as Vrystaat Ko-operasie Beperk (VKB), and Grain SA. Omnia, as a full-time partner, provides dedicated agronomic support, fertilizer products, technical services and training.

SUSTAINABILITY REVIEW

COMMUNITIES CONTINUED

LOWVELD

Omnia has a history of helping farmers in this area by providing technical support and fertilizer. At the last count, 729 farmers in this area have benefited from Omnia's assistance in growing crops such as sugarcane (TSB Scheme), litchis, other vegetables, macadamia nuts, and recently, tobacco. Omnia is also partnering with the Mpumalanga provincial Departments of Rural Development and Agriculture to formulate plans for the development of farmers.

MASSMART PROJECT WITH TECHNOSEERVE

This project supplies vegetables to Massmart and covers farmers in the Mpumalanga and Limpopo areas. Omnia supplies fertilizer and technical support to the scheme.

OLD MUTUAL/MASISIZANE PROJECT (OMNIA MATATIELE)

These are new projects in the Matatiele area, Eastern Cape, in partnership with Old Mutual's Masisizane Fund. The Masisizane Fund is financing mechanisation equipment, including tractors, implements and harvesters to the value of R30 million for 1 760 hectares. Omnia provides agronomical services and financing for fertilizer and other inputs needed throughout the season for a successful crop.

The first batch of equipment delivered prior to the start of the 2014/15 planting season included tractors and implements for primary cultivation through to planting and crop spraying equipment. The second batch of equipment was delivered at the end of March and into April 2016.

Women's Investment Portfolio Holdings Limited (Wiphold) in Centani, in the Eastern Cape and the Wiphold empowerment investment fund, is financing a project as part of its corporate social investment. Omnia provides technical assistance and fertilizer. The project is also part of Nedbank's Fair Share 2030 funding programme and other partners in this programme include Farmwise Grains.

In projects such as these, risk can be shared between different parties. As Omnia has a successful track record in this field, regular requests are received for Omnia to participate in such projects and Omnia's involvement is evaluated on a case-by-case basis.

SOUTH AFRICAN BREWERIES/FARMWISE/OMNIA INITIATIVE

Omnia is involved in this unique initiative, where at least 1 000 beneficiaries participate in the South African Breweries (SAB)/Department of Trade and Industry-funded project across the Underberg (Bergville/Winterton) region through to the midlands of KwaZulu-Natal (Newcastle/Utrecht).

In the current financial year, 1 500 hectares of maize have been planted with the potential of doubling this in the following year. These farmers are also beneficiaries of land reform in KwaZulu-Natal and continue to receive support for mechanisation and contracting for cultivation work on the lands. They also receive a supply of fertilizer financed by Omnia and a premium on their grain from SAB for non-genetically-modified crops.

DEPARTMENT OF RURAL DEVELOPMENT AND LAND REFORM PARTNERSHIPS

During November 2015, Omnia signed a generic national memorandum of understanding (MOU) with the Department of Rural Development and Land Reform (DRDLR). The DRDLR decided to work with Omnia as a preferred partner with a view to forming lasting collaborations and synergies to encourage the sustainability of selected emerging farmer projects. The partnership with the DRDLR is based on a tripartite partnership model. Three projects are currently being implemented in the 2015/2016 production season.

DRDLR – REID PROJECT

Omnia entered into a partnership with the DRDLR in the North West province's Ngaka Modiri Molema District. The aim of the partnership is to work with emerging farmers by offering training and technical advice as well as to promote the purchase of agriculture production inputs to ensure farmers are able to produce maize and sunflowers.

The DRDLR-REID project is divided into three:

- the 132 smallholder farmer project
- the Taung co-operative
- the Amahlubi Tribal Council project

The smallholder project comprises of 132 farmers who are allocated production inputs to plant 50 hectares each. Despite the late start in launching the project, a total of 5 650 hectares have been planted with sunflowers in the current financial year.

With the technical support of Omnia and the grant funding from DRDLR-REID, the Taung co-operative, which comprises 136 members, was able to plant 300 hectares of maize. The Amahlubi Tribal Council was also assisted to plant 266 hectares of sunflowers.

Despite the extended dry conditions during the planting season, crop emergence rates of between 80% and 90% have been realised in the above mentioned projects. The Omnia – DRDLR project has indeed contributed towards the creation of jobs in the area. The relationship between Omnia and DRDLR has solidified and in fact has been taken to another level. Omnia has demonstrated to the DRDLR that it is a partner to be relied upon and trusted in driving the developmental agenda.

DRDLR – INXUBA YETHEMBA FARMERS' CO-OPERATIVE PROJECT

In the Chris Hani and Sarah Baartman districts in the Eastern Cape, there are 13 sugar beet farms leasing properties from the DRDLR. These farms have Omnia as a strategic partner and are located in the Cradock and Cookhouse areas which fall under the Inxuba Yethemba and Blue Crane Route local municipalities which. Omnia collaborates with local partners such as DICLA Training and Projects and the Chris Hani Development Agency to further support these farmers.

The farms have a total combined 1 714 hectares of land irrigated either by pivots, sprinklers or flood irrigation. The 13 properties have a high potential for irrigated maize and lucerne production but some of the farmers have also added livestock and vegetables in an effort to increase cash inflow. The capital investment by the DRDLR for the 13 farms is R38 million and Omnia has provided a loan facility for fertilizer to the value of R4 million.

The DRDLR funded the mechanisation, infrastructure, and some operational costs. The implements, equipment and tractors were supplied and delivered to the mechanisation centre, and the infrastructure was completed and certified in April 2016.

2. The value of the investment of Omnia Nutriology® in enhancing water use efficiency and risk mitigation

Over the past year, South Africa experienced the worst drought conditions in more than 100 years, which has created an increased level of focus on water scarcity, use efficiency and the associated risk mitigation. All indications are that the drought is expected to pass in the short term, but that the problem of limited rainfall with unpredictable distribution will remain a fact that dictates agricultural production in South Africa and southern Africa. The International Food and Agriculture Organisation (FAO) classifies South Africa as semi-arid and, due to that, South Africa is classified as a high-risk agriculture area.

A classic symptom of drought stress on maize



SUSTAINABILITY REVIEW

COMMUNITIES CONTINUED

Over the past five years, Omnia Nutriology® and more, specifically, its Strategic Agricultural Services (SAS) Department, made significant investments in a few projects relating to the overall conservation of water in agriculture. A recent edition of the Nutriology® News, the Omnia in-house publication, provides greater detail on these developments. An overview of the most important projects that Omnia invested in over the past year are set out below.

SOIL MOISTURE CONTENT MONITORING AND PREDICTION

At present, the largest project which focuses on the modelling of soil water content, is operated in collaboration with the North West University and University of the Free State. The main objective of the project is to gain a better understanding how available soil water dictates potential yield. The objective is to accumulate rainfall data in real time from all currently available and own placed weather stations as well as basic in-field rain gauges managed by farmers. The data is gathered telemetrically or by data fed into precision farming applications on the farms. This “Big Data” is fed directly into a central GIS which is the main database to accumulate this information. Using this vast amount of data, sophisticated algorithms are developed in the joint project to predict available soil moisture in the soil profile. A working prototype of the model was recently launched and Omnia has exclusive ownership of the core algorithms.



One of the weather stations placed by Omnia to collect weather data



Soil moisture probe placed by Omnia

PREDICTIVE MODELLING OF YIELD

Having established a first prototype of predicting soil moisture, the next step was to develop an additional model (comprehensive multi-disciplinary model-dependent research programme) to predict potential yield in real time based primarily on such soil moisture prediction and rainfall probability. The programme begins with the specification of an algorithm based on first estimations from historical data that are used to generate new data, predictions and recommendations. This approach integrates all aspects of crop growth through simulations and mathematical programming and is constantly improved by comparing generated data with real data. Omnia has the competitive advantage of having a large team of agronomists that work on the farms to monitor, verify and gather data on a country wide basis and also outside South Africa.

The current accuracy of the combined models to predict eventual yield was recently proven to exceed 75%, taking specifically maize yield in the central growing areas in South Africa as an example.

RISK MITIGATION

The models on pages 65 – 68 are invaluable to the Southern African growers in order to make real-time decisions relating to the input management and marketing of their produce. The models are however, also highly sought after by entities related amongst others to insurance, credit provision and grain trading. Omnia Nutriology® is exploring the potential of these “new” markets.

SUPPORTING PRODUCTS AND CONCEPTS**NITROGEN USE EFFICIENCY**

It is well known that plant nutrition has a huge influence on water use efficiency. This includes primary nutrients such as nitrogen, potassium, sulphur and even beneficial nutrient elements like silica, to name a few. The most prominent nutrient impacting on water use efficiency is nitrogen. There is a crucial and delicate balance between too much and too little nitrogen regarding growth and water use by plants, not even elaborating on the danger of soil water contamination. Omnia has been running a nitrogen use efficiency and management programme in parallel with the above yield prediction modelling. Examples of the successful implementation of the research is the accurate use of OmniSap® (plant sap analysis) and chlorophyll meters in field on various crops to measure required nitrogen on the spot, using centrally accessed algorithms and smart device applications.

Even the form of nitrogen in the soil is important to ensure maximum water use efficiency. Omnia is fortunate to play a fundamental role in the manufacture of ammonium nitrate based nitrogen fertilizers which have been proven with the Group and international greenhouse and field trials to ensure on average 15% and higher water use efficiency than urea per unit of nitrogen, especially in the presence of effective calcium nutrition. (When applied as nitrate, nitrogen applied with calcium ensures significantly better water use by plants versus the use of urea). As an example, the flagship product developed to achieve this performance efficiency is the Omnia Greensulf 35™ which contains ammonium nitrate, calcium and sulphur.

PRECISION FARMING (OMNIPRECISE®) CONCEPTS

It was proven shortly after the onset of precision farming that soil physical factors and water distribution in field are the most prominent aspects impacting on the variance of the geospatial yield of any crop. Using soil profiling in combination with yield monitor data, Omnia has developed sophisticated models to define different zones of crop potential and therefore management zones within planted fields. Furthermore, models were developed to calculate the cumulative probability of yields per zone based on historical yields, regardless of crop rotation. These models have been branded as OmniZone™ and OmniRiskIQ™ respectively. They significantly support and increase the accuracy of the predictive modelling mentioned above and is the exclusive innovation of Omnia.

SOIL BIOLOGY, ROOT HEALTH AND SUSTAINABLE PRODUCTION

The critical importance of root health to ensure optimum uptake of nutrients and especially water is often underestimated. Omnia Nutriology® identified this along with the increasing importance of soil health and sustainable production methods some fifteen years ago. This gave rise to the establishment of OmniBio™ that focuses on the research of soil biology and generates products to sustain soil biology alongside sustainable fertilization programmes. Recently a range of root health products (Rhizovator™) were launched to ensure optimum root growth and biological disease resistance in row and orchard crops.

Omnia has recently invested a further R4 million in expanding and upgrading the state of the art OmniBio™ laboratory and increasing the related services. This will underpin the ongoing research and development efforts in their area.

SUSTAINABILITY REVIEW

COMMUNITIES CONTINUED

OMNIA NUTRIOLOGY®'S DATABASES

Over the past 20 years, Omnia Nutriology® has accumulated huge databases of soil, water, tissue and plant sap analyses data through its Chemtech™ laboratory. These databases, along with the vast OmniPrecise™ GIS and resultant big data that are growing exponentially, are of utmost value to support predictive modelling.

SUMMARY

Omnia Nutriology® has and still is investing heavily in aspects that support predictive modelling for the purpose of risk mitigation, especially with regards to water and nutrient use efficiency on the farm. This predictive modelling along with the support structures that Omnia has in place, however, have much more value than basic value addition to a fertilizer product. The technological future, also in agriculture, is challenging and demanding, but extremely exciting. New markets will be explored and related new risk-mitigating products will see the light to exploit this opportunity.

3. Omnia contributes to drought relief

Omnia partnered with various transport suppliers to bring water relief to drought-affected communities in the Free State area. Over a million litres were distributed to Steynsrus, Senekal, Viljoenskroon, Lindley and Bloemfontein.



Water relief to drought affected communities





MINING DIVISION

In the current financial year, BME undertook various corporate social responsibility initiatives at its sites and operations. Highlights of these included the following:

Site/operation	CSR initiative
BME Klipspruit, Mpumalanga	An employee soccer team was started during FY2016. Matches are played once or twice a month against other companies or BME sites
BME Gamsberg, Northern Cape	Donations of consumable goods including adult diapers were made to the Emmanuel Centre for people with multiple disabilities in Steinkop
BME DRC	BME donated the building material for the Kisanfu clinic near the Comide mine
BME Zimbabwe	BME sponsored awards for the best rock mechanic students at the University of Zimbabwe
BME Zambia	BME, together with First Quantum mine, sponsored the Development Cycling Team. The team topped the log in the Zambian Schools mountain bike series and six cyclists from Solwezi went on to compete in the South African finals of the invitational Spur School mountain bike series BME built and runs the Chingola Orphanage School. BME funds the school's three teachers and 150 orphans are supported in this facility
BME Burkina Faso	BME assisted the neighbouring Sangui village with a water well building project

CHEMICALS DIVISION

NALEDI TRUST HYDROPLUS FUEL PROJECT

In 2012, Protea Chemicals entered into a business relationship with Ballard Power Systems Inc. of Canada in terms of which Protea Chemicals would produce Hydroplus™ Fuel in South Africa and supply it for use in Ballard Fuel Cells within the southern African market. This relationship between Protea Chemicals and Ballard continues to this day and has been focused primarily on the use of Ballard Fuel Cells as a primary and stand-by power source for the telecommunications industry.

Early in 2014, Protea Chemicals was approached by Ballard in connection with a fuel cell rural electrification field trial in which they were partnering with Anglo American Platinum to provide off-grid electricity to the Naledi Trust community near Kroonstad in the Free State. The other collaboration partners in the field trial are the Department of Energy, the Mqohaka Municipality and Eskom Research Testing and Development facility. The field trial, which is a world first, is intended to demonstrate methanol, fuel cell power generation as an alternative to supply from the national power grid. From the outset, Protea Chemicals provided free of charge technical guidance, advice and support in respect of the design of the Hydroplus™ Fuel bulk delivery system, the temporary on-site bulk storage tank, and all the related tanker offloading, product handling, and related activities. This included safety, health, environmental and quality aspects.

The first delivery of Hydroplus™ Fuel to the site was made by Protea Chemicals on 30 June 2014 and the fuel cell power system was commissioned in August the same year. Despite some technical issues, which included on-site fuel contamination, which was resolved with the assistance of Protea Chemicals, the project has been successful in supplying 230V, 50Hz, AC power through a micro-grid to each of the 34 households, sufficient for cooking, refrigeration, lighting, television, radio and cell phone charging. The households are indigent and receive 50 kWh per month of Free Basic Electricity (FBE). The community also purchases pre-paid electricity and a significant increase in this demand indicates the evolution of consumer behaviour. A +75% system availability over the duration of the field trial has been achieved. The field trial is expected to continue until March 2017, to enable additional data collection and to further prove the concept. Protea Chemicals will supply the Hydroplus™ Fuel for the duration of the field trial.

SUSTAINABILITY REVIEW

COMMUNITIES CONTINUED

In 2013, the Department of Energy committed R3.5 billion to the electrification of South African households within a three-year period. This was to be achieved by extension of the existing power grid through construction of new power transmission lines and by providing solar units for individual homes. However, fuel cell micro-grid technology is a cost-effective alternative to grid extension in rural areas far away from the grid and could accelerate access to electricity. It is estimated that over 2 million households lack access to grid power and more than half of these are located in rural areas. Thus, there is a potential market for fuel cells supplying power to more than 600 000 homes where grid connection is uneconomical, as well as potential for schools, clinics and other infrastructure. The other benefits of fuel cell rural electrification in the country are job creation through local manufacturing and deployment and the potential for local platinum beneficiation, because platinum is used as a catalyst in the fuel cells.

COMMUNITY AWARENESS TRAINING

Protea Mining Chemicals supplies chemicals beyond South African borders in remote areas where mines are located, such as the rural areas in Namibia, Malawi, Zambia and Botswana. Given the remote supply chain routes to these customers and to maintain the viability of these transactions, hazardous chemicals such as sulphuric acid and anhydrous ammonia are transported in large volumes using bulk road and rail tankers. As a result these chemicals are transported through communities that live along the routes, often without the necessary infrastructure in place to deal with potentially hazardous chemicals incidents.

Baseline risk assessments were conducted to identify the risks associated with the transportation, handling and storage aspects of the hazardous chemicals, as well as any necessary emergency response. Thereafter, Protea Mining Chemicals concentrated on the implementation of actions to eliminate or minimise these risks.

As part of the commitment to the principles of Responsible Care® and to mitigate the risk of managing these potentially hazardous chemicals incidents effectively, the business recognised the need to provide communities with awareness training on the risk of these hazardous chemicals being transported through their areas. Furthermore, it was agreed the training should be extended to emergency response services such as the police, hospitals and fire departments to supply them with the basic knowledge required to deal with such events. Community awareness training carried out in the period under review was well received both by community members and the media.

Large-scale emergency simulations have been conducted to ensure all parties are well prepared for any potential incidents and to test for any possible shortfalls that might exist in response effectiveness. Protea Mining Chemicals conducts regular audits of all systems and safety equipment required for effective response for all stakeholders and service providers along the supply chain. Additional mitigating measures have been employed by stationing of well-equipped emergency response trailers and infrastructure at suitably-trained service providers' premises. This service has not been offered by any other chemical supplier and the team prides itself on going the extra mile to ensure that all communities and the environment are protected as far as is reasonably possible.

Where appropriate, local participation and job creation have been promoted while also adding skills to the local responding service providers and resources.

A total of 482 people were trained in dealing with anhydrous ammonia in Namibia and Botswana. In Namibia, 1 065 people were trained in managing sulphuric acid. This brings the total number of people trained to date to 1 547.

PREFERENTIAL PROCUREMENT

Omnia favours the procurement of products and services from broad-based black economic empowerment (BBBEE) suppliers. For the measurable procurement spend with suppliers using the BBBEE recognition levels as per the DTI BBBEE Codes, was approximately R8 billion (2014: R9 billion) and amounted to 70% (2014: 46%) BBBEE procurement spend.

Omnia is working towards achieving key targets as stated in the updated Codes of Good Practice, which require a 70% spend on suppliers that qualify as BBBEE accredited suppliers. Most suppliers to Omnia are required to be verified and meet the minimum BBBEE requirements.

To ensure a consistent supply chain, the Group has centralised procurement practices at divisional levels and has improved Omnia's collective buying power. A large portion of the overall procurement spend at Omnia is on raw materials used in the manufacture of the business's various products. Many of these products are specialised and can only be obtained from specific local or international suppliers. As a result, these suppliers do not fall within the requirements for preferential procurement or the BBBEE codes and are excluded for the purposes of these calculations.

