

PULA INVUULA

Environmental change – it's a reality

Grain SA magazine for
developing producers

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THE TWENTY FIRST CENTURY HAS PRESENTED MANY CHALLENGES TO THE MODERN FARMER. ONE OF THESE CHALLENGES IS ENVIRONMENTAL CHANGE. WE HAVE REACHED A STAGE NOW WHERE THIS TOPIC CAN NO LONGER BE AVOIDED.

Farmers need to recognise the realities and start to address the large scale environmental issues at the grass root levels, on the farms and even in our gardens. Farming needs two angles of approach if we intend to start slowly changing this course of climate change. These are environmental management and agricultural management.

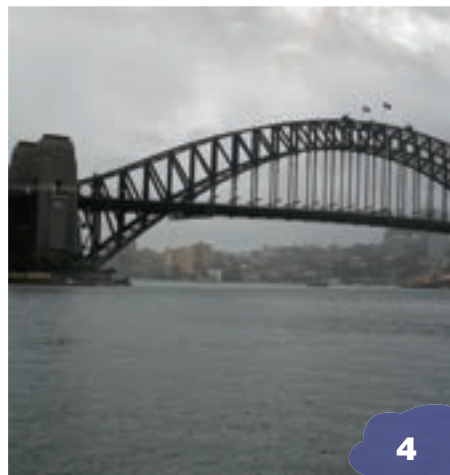
In an official release by the United Nations Environmental Programme (UNEP) it was stated that farmers and food production in general will be one of the industries that is the worst affected by climate change. This is a worrying forecast, but if action is taken by farmers of all scales than many of the resulting factors may be reduced significantly. This ar-

ticle will outline some basic steps to make your farm more suited to deal with environmental challenges such as drought and water shortages.

Drought

Drought is expected to become more frequent and more severe because of climate change. To prepare for events like this we need to do our homework on the weather. Farming, by and large is a lot about timing. Our planting and harvesting times need to be precise so that the long periods without rain will have minimal effect on our crops and their yields.

Crop plant densities also need to be adjusted according to the results of your "weather homework". Perhaps the most important step is that farmers keep abreast of new developments in the world of agriculture. There are constantly new discoveries and advances being made, whether it is in genetics, chemicals or technology. Drought resistant and stress resistant crops may be the only alternative if



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Environmental change – it's a reality



Mme Jane says...

Isn't it wonderful that by March every year, we have all had good rains and the crops have managed to survive the heat of summer? Nature is amazing and we are so blessed!

A few years ago we said that we had declared "war on weeds". Having been around many areas recently, I see that we are winning the war, although it is taking too long. During 2011, more than 1 100 of our smaller farmers bought knap sack sprayers – these sprayers are an important part of your armour against weeds. Remember that you must not stop fighting weeds ever – if you let them go to seed, there will be thousands more weeds in the coming season. Keep up the fight – spray and or skoffel, but do not rest until you have won the war on your land.

We believe that we are experiencing strange weather patterns due to the effects of global warming. Whatever the reason may be, we are experiencing strange weather. Some areas are dry when they should be getting rain, while others are getting too much rain, or excessive heat etc. The strange patterns force us to improve our crop management. please, you must control your weeds chemically. In wet years, you are not able to get into the lands to control the weeds mechanically and then the crop suffers from the weed competition.

We have seen the benefits of using Roundup ready seed – remember that this special seed has been developed in such a way that Roundup does not kill the maize but it kills all other plants. Using this special seed costs you more at planting, but you save in many other ways and you are almost assured of a very good crop. Please try to make provision to be able to buy this expensive seed next year – you will be delighted with the results.



we do not get a grip on environmental change. If we apply the knowledge that we gain during our "weather homework" and plant the correct crop varieties and densities and we plant them at the right time, only then we can hopefully avoid some unnecessary losses resulting from drought stress.

Water management

It is expected that there will be an increase in water scarcity because of climate change. Globally the agricultural sector accounts for about 70% of all water usage. Since farmers are the main culprits of water use, it is important that we manage our water consumption efficiently and effectively in order to reduce our overall influence on the water crisis.

How do we improve our on-farm water management?

We have to ensure that all the water systems on your farm are operating efficiently! Fix all leaking taps, joints and valves and monitor for underground pipe leaks. For livestock farmers a way to be efficient is to set your float levels on your drinking troughs at a level which reduces spillage (usually about 15 - 20 cm below the rim), this saves a significant amount of water each day.

Once you have improved your water system management, the next step is to engage in water friendly farming practices.

- Don't irrigate during the hottest hours of

the day, this will reduce evaporation.

- Cover newly planted crops (for smaller areas) with a mulch of dried straw, lucerne hay, wood chips or grass clippings, this also reduces water evaporation.
- If your farm is located on hilly terrain it will be beneficial to engage in xeriscaping which is a method of natural landscaping by following the contours of the slope you are cultivating. This will reduce soil loss from runoff and will allow for more water absorption.
- Finally, implement some kind of rain water harvesting system on your farm, the benefits are huge. This may be installed on your house or shed roof and the water can be used for any number of things ranging from small scale irrigation to washing clothes. It saves clean water from being wasted, it saves your money on the water bill and it saves you time when the water supply is cut-off again.

The environment and its components are the basis on which agriculture is based on and if we intend to keep exploiting it without consideration of its health then we are in trouble. For food production to continue into the future and to cater for the rapidly growing global population we must become adaptive and responsive to the challenges that nature throws in our path.

GAVIN MATHEWS, BACHELOR OF ENVIRONMENTAL MANAGEMENT, UKZN

Developing Farmer of the Year visits Australia

ON 7 - 22 JULY 2011 WILLIAM MATASANE AND I (JOHAN KRIEL) HAD THE AMAZING OPPORTUNITY TO TRAVEL TO AUSTRALIA AND TO SEE HOW FARMING WORKS THERE. READ ABOUT OUR AMAZING (AND EDUCATIONAL) JOURNEY TO THE OUTBACK.

On 26 Augustus 2010 the annual Day of Celebration, where the Grain SA Development Programme acknowledged members who produced more than 250 tons, took place. One of the guests invited was Dr Lee McNicholl, retired vet and current cattle farmer in Australia. Dirk van Rensburg, former Executive member of GSA and member of the work group for Developing Agriculture, brought him with to observe what is happening in South Africa in terms of agricultural development. They met each other years ago when Dirk visited Australia with a Land Care initiative and Lee visited South Africa to take part in a veteran rugby tournament. After a lecture by Dr McNicholl an invitation was extended to the winner of the Grain SA Developing Grain Farmer of the Year and anyone from his supporting team to visit Australia for 14 days. The farmers in his area would look after the visitors as long as they paid for their own flights.

William Matasane won and the rest was history. With great passion and drive Jane McPherson organised for ABSA to pay for William's ticket and for the Maize Trust to sponsor me. The Executive Management of Grain SA sponsored allowance money for us. And so the giant adventure began for two young farmers who have never even been to Cape Town, let alone overseas.

On 7 July 2011 the two very scared and pale but excited men departed from Johannesburg to Sydney, Australia. After 16 hours we

landed and two hours later we were in Brisbane, where Lee and Megan McNicholl received us. For the next two weeks they were our hosts, tour guides and made us part of their family.

We stayed with the McNicholls on their farm, Dulacca, for most of the trip. Lee is a cattle farmer with 2 000 cattle. Some of the camps are 800 ha big and everything is cleared and the pastures of grasses and legumes are established. He only has one labourer who helps him and for the rest they use Australian cattle dogs. The majority of the cattle are Angus, but there are Brahmans too. This part of Australia is tick free – I couldn't believe it! They sell directly to feedlots of which there is no shortage. In their houses they only use rain water which they gather in tanks and the toilets are flushed with dam water. Boreholes are used for the livestock's water cribs but the water is not fit for human consumption.

On the first night we slept in Brisbane and took a trip on the Brisbane River. We also attended the Super 15 rugby final at the Suncorp Stadium. We even joined the Aussies in their victory cries when the Reds beat the Crusaders. The following day, Sunday 10 July, our tour officially started. We saw and learned so much that I can only give a summary here.

We visited Queensland, 400 km North of Brisbane, in the districts of Toowoomba, Condamine, Dalby and many others.

We visited two cattle feedlots during our stay: Grassdale which is owned by Mort & Co as well as Lillyvale, owned by the Morgan family. At Grassdale they have 58 000 cattle. The farm is 5 585 ha big and they plant grain on 2 590 ha of this. The rest, 2 995 ha, is used for pastures on which they do backgrounding on smaller calves which aren't ready



A very excited William Matasane with Lee McNicholl and Paul McNicholl at the Super 15 rugby final at the Suncorp Stadium.



William and Johan also visited the Leslie research centre in Queensland.

Developing Farmer of the Year visits Australia

for the feedlot yet. All the water for the livestock comes from a borehole more than a thousand feet deep. The water is boiling hot and first has to be cooled in a big dam before it runs to the water cribs. All the roads are tarred and it's very clean and neat.

Lillyvale feedlot is on the estate Arubial and as mentioned, is owned by the Morgan family. Margaretta Morgan, 71 years old and her two sons manage the feedlot and a big crop farm. They plant grain sorghum, wheat and cotton. Despite her advanced age, Margaretta still drives a Toyota 4x4, raises calves and goats while still managing a Brahman stud and a beautiful flower garden. She works in her home, cooks, cleans and is always neat, hair done and nails painted. What a formidable woman!

We also stopped by Rodney and Margaret Hamilton's farm Callitras. During the 2009/2010 floods their farm was under water three times and he lost his sorghum and wheat harvests. He only applies zero-till techniques and only uses a weed sprayer, planter and a harvester. The sprayer covers 42 m at a time and has cameras and only does spot spraying. The fields are as level as a table with a one degree fall to one side. They were busy harvesting the sorghum when William slid behind the steer of the green monster. I could not get him away again.

Lindsay Ward, an expert in zero-till, spent the whole day with us to show and explain to us how they handle their land. We also visited the Leslie Research Facility where they do research on wheat, barley and oats. Almost like our Small Grain Centre, funding is provided by the state as well as through levies paid by grain farmers. By doing so they have a say in what must be done.

Our tour also included an outing to the Sandon Glenoch Angus stud of Roger Boshammer where they ready bulls for auction. Their pastures

are planted on land that was first cleared, then levelled before planting. We also stopped by Peter Wright's farm, Banyula, where they practise cell grazing. Camps are sized in between 25 ha and 35 ha and hold on average 400 cattle. In the summer the cattle move daily and in the winter only every third day. The grass looks like a lawn and the farmer currently has too much food for the livestock he has. It's incredible what Peter and his wife, Mary, have achieved. They did it all on their own – no labour.

The last two days we spent in Sydney where we visited the Sydney Opera House, the Tower Bridge and the aquarium. We did two interviews with the Australian TV Broadcasting Cooperation as well as three radio interviews. We played in a veteran rugby match for the Condamine Codgers against the Bundaburg Rum Ruckers, where William ran all the way from the halfway line to score a try under the poles.

The farmers of Australia took us into their homes and into their hearts. They showed us around and took us everywhere. They want South Africa to be a success. They want to see land reform executed successfully. They were our type of people and for us two Free Staters, this was quite an experience, an opportunity of a lifetime. We are very grateful to everyone who made this journey possible for us. Jane, for her persistence until it realised, ABSA, the Maize Trust and Grain SA's Executive Management for sponsors, as well as Dirk van Rensburg, who started it all. Both myself and William would like to say thank you so much!

**JOHAN KRIEL PROVINCIAL CO-ORDINATOR OF
THE GRAIN SA FARMER DEVELOPMENT PROGRAMME**



The Sydney Tower Bridge was one of the many places visited by William and Johan while in Australia.

Winter cereals

Select the correct wheat cultivar



UNFORTUNATELY THERE ARE VERY FEW DEVELOPING FARMERS WHO ARE MANAGING TO PLANT WHEAT AS A RESULT OF THE FACT THAT THEY CANNOT GET PRODUCTION CREDIT.

Although we are inclined to blame the money lending institutions, we must also remember that farming is a business and no one is going to lend you money if the enterprise budget does not seem to be profitable.

The costs are high and particularly in the Free State, wheat is quite risky as we have not been getting early spring rains which are so necessary for this region. Remember that in the Free State we do not get winter rains (as in the Cape) and so the wheat crop grows on the moisture conserved in the soil. If we get good spring rains then the Free State can get a good wheat crop, however, on only the moisture in the soil, a good crop is unlikely.

There are farmers who will be planting wheat and it is necessary to think about cultivar selection. Cultivar choice is one of the most important economic decisions producers make. The aim is to achieve highest return with the lowest risk.

Yield potential

Cultivars differ in their yield reaction to changing yield potential conditions. Some cultivars perform better at a lower yield potential, while others utilise higher potential conditions better. The ideal cultivar would yield the highest at all yield potential conditions. This would indicate

excellent adaptability, but unfortunately, such a cultivar is seldom found due to other factors, such as grain quality, hectolitre mass and disease susceptibility, which also plays a role. It is especially important that under dryland conditions the producer should know the yield potential of his farm and lands according to soil, climate and managerial ability; thereby a realistic target yield can be achieved.

Grading and quality

Grading regulations for bread wheat include a minimum protein content, minimum hectolitre mass and minimum falling number. As the price you will get for the crop is dependent on the grades achieved, you must ensure that the cultivars selected will meet these requirements under your production conditions.

Diseases and pests

The occurrence of diseases and pests in a region and the susceptibility of cultivars to these diseases and pests must be considered. In this way, risk and input costs (spraying costs) can be reduced.

Seed price

When the producer buys more expensive hybrid seed, he must be sure that the seed costs will be recovered through a higher yield. Under especially the lower potential dry land conditions, it will probably benefit the producer to plant seed of the cheaper, pure line cultivars.

Select the correct wheat cultivar

Hectolitre mass

Hectolitre mass determines the grade of the grain delivered and this characteristic is strongly associated with a particular cultivar. Large price differences between the various grades and utility grade also affect cultivar choice. Especially in areas where extreme soil water and temperature stress occur using grain filling, where continuous rain occurs during harvesting and where plant diseases occur regularly extensive losses can be suffered with the downgrading of the grain due to a low hectolitre mass.

Straw strength

The lodging of both irrigation and dryland wheat often leads to yield losses. It is usually a problem where critical yield potential conditions are exceeded, but other factors such as wind or storm occurrence, overhead irrigation and excessive nitrogen fertilisation also play a role. In areas and situations where lodging is common, the planting of cultivars prone to lodging must be considered carefully.

Aluminium tolerance

The more acid soils (pH KCl) less than 4,5 and with an acid saturation greater than 10% in certain wheat areas can attain free aluminium levels that are toxic to certain cultivars. Cultivars differ in their tolerance to these harmful levels. If such conditions do occur, it would aid the pro-

ducer to adapt his cultivar choice. Although corrective liming is the best solution, tolerant cultivars can be considered as a short term measure.

Photoperiod and vernalisation

Photo period and vernalisation control the growth period and have long been known as important factors determining cultivar adaption. Cultivars must be chosen that are adapted to climate conditions such as growth season length, rainfall pattern, temperature and the first and last frost dates. In this regard, the most suitable cultivars have already been evaluated and this is reflected in the optimal planting dates for each cultivar.

Shattering

This factor refers to how well the ripe kernel is attached to the ear, as well as to what extent the husk cover protects the kernel. Under irrigation certain cultivars are more susceptible to bird damage and losses during harvesting.

Pre harvest sprouting tolerance

This refers to the tolerance a cultivar has against germination in the head prior to harvesting. It is important to know that no released cultivars will sprout in the head under normal conditions. Certain cultivars are however, more prone to pre-harvest sprouting than others.



Weed control

– from start to finish



GRAIN PRODUCERS IN SOUTH AFRICA ARE WELL AWARE OF THE NEGATIVE EFFECT OF WEEDS GROWING IN THEIR FIELDS. EFFECTIVE CONTROL AGAINST THESE INVADER PLANTS WHICH STEAL MOISTURE AND DEPRIVE CROPS OF NUTRITION IS ESSENTIAL THROUGHOUT THE GROWING SEASON AND ALL SUCCESSFUL COMMERCIAL FARMERS GENERALLY HAVE A RIGID PROGRAM IN PLACE TO CONTROL THE VARIOUS PROBLEMS KNOWN TO THEM.

The secret to effective weed control however, is found in continuous and effective monitoring of the situation in the fields from pre-planting right through to post harvest.

The extent of weed infestation in the fields is directly related to yield in production from that field. Farmers generally begin the new season enthusiastically by following all the correct processes. Weed control is given the necessary attention so the new seeds are planted into beautiful weed free soils and the little plants are able to push through to the sunlight and grow freely. Too often however, farmers “run out of steam” – or cash – or energy – or they get distracted by other pressing demands from their businesses and they neglect to attend to weeds that are entangling themselves around the roots of the growing crops, reaching maturity and producing seeds which will either form what is known as the “seed bank” for the next season or which will contaminate the grain which is to be delivered into the local silos for marketing.

Weeds have different life cycles.

- Some are annuals which will complete their life cycle within one year from seed germination right to seed production.
- Biennial weeds will complete their life cycle in two years by germinating one year, going dormant through the winter and then growing further the following year to produce seed then die.
- Perennial weeds live longer than two years and can often reproduce from their vegetative material such as runners, roots, tubers or bulbs as well as their seed.

Weeds which are commonly a problem to maize farmers generally have similar life cycles and growth patterns to the maize plant causing them to threaten maize production potential by influencing both the size of the yield and the grade quality of the harvest. Furthermore, weeds often are very tough plants which can survive harsh, unfavourable growing conditions and then still have a high seed production potential.

The seed bank

Where weeds are left to grow to full maturity and produce seed which falls onto the soil, these seeds become what is known as the weed “seed bank”. Weed control levels below 70% of the infestation lead to abundant seed production and enormous seed additions to the seed-bank which will result in future high weed seedling populations and are the major source of infestation in cultivated lands.

Successful long term weed management then involves the control of weed seedlings growing in the fields as well as a conscious effort to reduce the seed bank in the lands by making sure the weeds don't get the opportunity to cast fresh seed onto the soil. So it is not enough to only focus on the early season weed control – weed control has to be a primary focus throughout the season!

Weed control throughout the season

The critical period for weed control in maize is three to six weeks after planting. Timely intervention at this stage is essential to ensure the promise of maximum yields. Maize plants which are kept weed free throughout this growth phase could grow through the remainder of the season with little negative impact on the plant's yield even if weeds still do grow around it. It is however important not to stop weed control at this point and lose sight of the long term threat of the weeds growing to maturity in the field. Farmers need to familiarise themselves with the different weeds and their unique characteristics. Be informed on the life cycle of the weeds in the region and the affect they have on the plant and the harvest. Know the implications of the seed which will be sown from the mature plant as it lies on the harvested land and be aware of the influence the weed seed will have if the seed is found in the grain which is delivered to the silo when you wish to market your produce.

Grain at the silo

Your local silo manager will be able to guide you. The grain sample taken from your wagon load of grain is tested for a number of things such as sample quality and grade. Every load delivered is tested for “skadelike sade”. The weed seeds found in the sample will influence your profit margin and any undesirable or poisonous seeds will mean your grain delivery will have to be sifted and cleaned and tested. The sifting process could be done a few times over until the silo manager is satisfied the grain is safe to be stored. Every sifting process has a cost implication which you the farmer will pay for thereby losing profits. At the local NWK grain silo which I consulted, the sifting fee for one process is R44,00/ton. When the weed has not been well controlled during the season the silo manager says the weed seed content in the grain is so high that more than one sifting process is necessary to remove all sign of the toxic seed.

Culprit number one: *Olieboom* is the farmer's enemy!

One of the biggest problem weeds in grain farming is *Datura stramonium*, commonly called *olieboom* or *jimsonweed*. This is a widespread summer weed originating from the Americas but now found in most of the worlds grain growing regions. The *olieboom* commonly grows 1 m to 1,5 m tall. The flowers are trumpet-shaped, white to cream and even light shades of purple in colour. Each plant can produce as many as

◀ Weed control – from start to finish

100 or more seed capsules which fill with up to between 200 - 300 seeds each. Some scientific studies report that where the weed is not controlled, up to 2 000 seeds per square metre are produced and added to the soil bank. These seeds are able to remain dormant in the soil for as long as 39 years. The olieboom plant often emerges at the same time as the maize plant, grows vigorously and is highly competitive for water, nutrient and light requirements. The weed will grow vigorously throughout the maize growing season until the first hard frost so it can even impact the maize plant at the grain filling stage.

Another common local name for the seeds of the *olieboom* plant is malpitte or madness seeds. All parts of this plant – especially the seeds and the leaves – are highly poisonous and cause serious hallucinations and delirium and may even be fatal if eaten by humans and livestock. Many hospitalisations and even deaths have been reported.

It is because of the highly poisonous nature of the *olieboom* plant that farmers should have rigorous control over this weed and every plant should be destroyed. Grain traders cannot risk contamination of the grain and also animals should not be allowed to graze in fields contaminated by the olieboom. Furthermore, hay should not be made from the fields until all the olieboom has been removed either through spraying herbicide or by pulling the weed out by hand.

JENNY MATHEWS, CHAIRMAN OF THE GRAIN SA
FARMER DEVELOPMENT PROGRAMME



This special feature is made possible by the contribution of the Winter Cereals Trust.

On the radio

Do not miss these interesting programmes on radio, which covers issues of interest for developing farmers.

Radio	Weekday	Presented by	Time
Zululand FM	Saturday	Jurie Mentz	06:10
Ligwalagwala FM	Thursday	Jerry Mthombothi	05:10
Umhlobo Wenene FM	Tuesday	Lawrence Luthango	04:30
Alfred Nzo FM	Monday	Ian Househam	19:00 - 20:00



When a neighbour shows goodwill...



Jack Motsoeneng showing the muddy water on his farm.

MR JOHN MOTSOENENG AND HIS BROTHER JACK FARM IN THE ABERFELDY AREA IN THE EASTERN FREE STATE. THEY HAVE BEEN SERVICED BY GRAIN SA SINCE THE LATTER PART OF 2010 AND DUE TO LATE RAINS WHICH HAMPERED THEIR LAND PREPARATION THEY ONLY MANAGED TO PLANT SOME SOY BEANS AND DRY BEANS THIS YEAR.

They are however rated as very hard working farmers on a high-potential farm, with a commitment to achieve their goals. Grain SA's goals with them are to support them to reach commercial status.

During a visit in December 2011, we discussed weed control in soy beans. Since they planted Roundup Ready soy beans the application rates and methods of application were discussed. One very important aspect with Roundup application is the need to use absolutely clean water. The fact that Roundup gets attached to clay particles and therefore gets nullified is the main reason why Roundup is such an environmentally friendly chemical. It however makes it imperative for the correct water quality to be used.

John was worried as the borehole on his farm was not operational and planned to use water from the natural stream on the farm. We looked at the water quality and it seemed to be fine then. I again visited the Motsoenengs on 12 January 2012, to find them spraying Roundup. This was after some very nice rains in the area. As suspected the water being used from the strong flowing stream was very muddy and totally unsuitable for Roundup application. He told me that he had been using this water for the past four days, with at least 30 hectare sprayed.

I pointed out that this area will have to be re-sprayed as the chemicals could not work under the circumstances. The loss of so many litres

of chemicals was also bad news. John was distraught. He wanted to finish this very important operation and he had no other option, as clean water was not available. His reply: "Ntate, what can I do!" I asked him to please stop spraying and promised him that I would make a plan, I had no idea what plan!

Driving out of the farm, I went past a neighbour's farmstead and on the spur of the moment turned in. Without questioning my purpose, I was invited in by a very friendly Mrs Retief and while having a cold drink we were joined by the elderly Mr Retief. From here on the conversation went like this:

Retief: "Pleased to meet you Naas, what are you selling?"

Me: (Laughing) "No Oom, I'm not selling anything, I am looking for help."

Retief: "How can we help?"

Me: "Oom, I work for Grain SA and we are helping the Motsoenengs, your neighbours" and I explained the predicament that we are experiencing.

Retief: "We will help you with pleasure. The wind does not cost me anything and there is a reservoir that is full right now. Finish your cold drink and I will show you where. I experienced only respect from my neighbours and it will be nice to help them out."

Problem solved, but much more than that. What an eye opener that so much goodwill and neighbourliness exists in a country that so often experiences racist conflict. I once heard from a very wise old friend: "Farming is not a money making racket, it's a way of living" How true.

NAAS GOUWS, PROVINCIAL CO-ORDINATOR OF THE GRAIN SA FARMER DEVELOPMENT PROGRAMME

The importance of proper farm management

FARM MANAGEMENT CAN BE DESCRIBED AS THE TAKING OF THE BEST (PROPER GOAL ORIENTATED) DECISIONS REGARDING THE HUMAN RESOURCES AND ALL THE PHYSICAL RESOURCES TO ACHIEVE THE OBJECTIVES OF THE PARTICULAR BUSINESS.

Farm management is defined as goal-orientated decision-making. To make the best decisions on applicable farming issues a farmer must have the following:

- Integrity and a sense of responsibility;
- Practical experience;
- Technical knowledge;
- Business acumen; and
- Information about the farm that he is managing.

Areas of management

Within a farming business the owner/manager must manage the following areas:

- Production management (physical production of products);
- Purchasing management (buying of production inputs and assets);
- Marketing management (selling of products);
- Financial management (managing of finances includes taxes, estate planning, risk and uncertainty);
- Administrative management (office and records);
- Human resource management (personnel and labour);
- Public relationship management (relationships and communication);
- Asset (control, maintenance and selling) and stock management (control); and
- General management (Occupational Health and Safety, fire control, theft and farm safety).

Describing the term business ethics

What is a farming business?

The business of farming is to produce products that people need at a profit by combining and converting the four production factors, namely land, capital, labour and management into useful products such as food and/or fibre. An example of this is the combination of land, seed, fertiliser, diesel, water, chemicals, feed, remedies, labour, vehicles, machinery and equipment to produce wheat, oats, maize, meat, wool, eggs, mohair and so forth.

Ethics

Ethics is described according to the Chambers Dictionary as the science of morals, that branch of philosophy which is concerned with human character and conduct – a system of morals and rules of behaviour. Or according to others as the moral principles governing or influencing conduct. Or a bit more practical ethical conduct = legal conduct + common good behaviour. Common good behaviour refers to yourself. How you conduct yourself can be determined by culture, religious background, your upbringing, examples from other people and so on.

Business ethics

Therefore the term business ethics can be seen as the way you conduct your business. It is important to recognise the fact that there are dif-

ferent cultures – Japanese, Xhosa, Tswana, English, Afrikaner and so forth – but there is a definite business culture. Do you adhere to all laws and common good behaviour? In your conduct regarding your business – do you portray a business culture and do you portray characteristics such as integrity, responsibility, trustworthiness, honesty?

When you run (manage) a business such as a farming business you are also a leader and the way you conduct yourself portrays an image of your business.

The importance of business ethics

Needs of people

From the creation of mankind, man was in need of something in order to live. Food has always been a basic need, together with clothing and shelter. In the beginning mankind provided for his/her own needs by for instance hunting, harvesting crops from wild plants, making his/her own clothes and sheltering in caves.

As mankind progressed the needs also progressed to the high level of needs of today. Mankind has also moved from self-sufficiency to purchasing most needs. Very broadly spoken in today's modernised world businesses basically provide in virtually all the needs of mankind in an exchange for money.

Thus today we need money to exchange for all our needs. As human beings we can only acquire money by working to earn an income. Either you work for yourself or for someone else. If you have chosen the route of working for yourself, like when running a farming business the business need to be financially successful. In primary agriculture it is only possible if your business provides a product/s people need in order for the owner to acquire an income. Only if a business makes a profit does the owner/s earn an income (salary). If there is a loss, there is no income for the owner/s.

Income and expenditure

The “pacifiers for needs” provided by businesses are “sold” to consumers. The money received in exchange for the needs is the income of a business. During the process of producing and/or delivering the needs a business incurs certain costs or expenditures. These costs are divided into different groups:

- **Production costs** – seed, fertiliser, feed pesticides, medicines, harvesting and marketing costs.
- **Overhead costs** – bank charges, office costs, accounting and vehicle costs.
- **Fixed costs** – licenses of vehicles, wages of permanent employees, depreciation and insurance costs.
- **Foreign factor costs** – interest on loans, salaries of a manager and rent for leasing land.

Total costs being the sum of all these costs.

Profit/loss

Profit equates to income being more than total expenditures. $\text{Income} - \text{Expenditures} = \text{Profit/Loss}$ ($I - E = P/L$).

In terms of a business everything, everybody involved with the business, be it owner/s, managers or employees, through what they do, or do not do, what they should do, affect the profit (in other words they affect income and/or expenditures) of the business.

- When you use the telephone or cell phone, you affect costs and eventually profits.
- When you drive to town with your bakkie, you affect costs and eventually profits.
- When you use the tractor, you affect costs and eventually profits.

Likewise the way you as manager/leader of your business conduct yourself will affect the profits/losses of your business. It can either be positive or negative. For the owner to be able to earn a salary it is important that the business maintain sustainable profits over a period of time. Therefore the owner/manager should do everything in his/her power to achieve just that.

Good solid business ethics (positive conduct) will go a long way to maintain sustainable profits. On the other hand poor business ethics will achieve vice versa. Yes, there might be short term advantages but in the long run poor business ethics will result in a poor business.

As a substantial part of business ethics, integrity is unfortunately a vanishing commodity today. Personal standards are crumbling in a world that has taken to the hot pursuit of personal pleasure and shortcuts to success. Remember: your good name is an invaluable asset. Nobody can take it away from you except you yourself.

- A good name is better than riches.
- A good name is sooner lost than won.

Business ethics and production management

Production management

Agricultural production involves the combination and conversion of four production factors, namely land, capital, labour and management into useful products such as food, fibre, etc. An example of this is the combination of land, seed, fertiliser, diesel, water, chemicals, feed, remedies, labour, vehicles, machinery and equipment to produce wheat, oats, maize, meat, wool, etc.

The purpose of any farm business is exactly that “to produce something that people need” at a profit and that is what production management is all about. In other words production management concerns itself with the production of products on a farm.

Bear in mind that production is the most fundamental function of a farming business and has a very direct influence. The basic formula is $\text{Income (I)} - \text{Expenditures (E)} = \text{Profit/Loss}$.

What is produced on a farm and eventually sold is most probably the only source of income for the business, whilst during the production process a lot of expenditures are incurred. Therefore the way the pro-

duction is managed on a farm has a very direct influence on $I - E = P/L$.

In producing a product or more than one, finances and marketing often pose challenges. Finances being a challenge when you are in need of funds to finance your production expenses. Where do I acquire the necessary funding? And when you borrow money expenses are increased because of interest being payable. This increases the pressure on the finances of the business.

Sometimes the marketing of products pose a challenge. In terms of the marketing of products a basic principle to remember is not to commence with production if you do not have a market for your products. If you do not have a market you might not be able to sell your products and if it is possible to sell the product the price obtained will be unknown. Too reduce the risk regarding the marketing of products and the price farmers often enter into marketing/production contracts of which a variety is available.

Although one would feel that on your farm it is your decision to produce what you prefer. Business reasons such as finances, marketing, price and risk management, already mentioned, may limit what you can or how much you can produce. This is managed by entering into contracts for funding purposes or marketing/production contracts to manage market and price risks. One should also never attempt to produce a product which is not adapted to the environment of the farm.

Examples may be when you acquire funds from a grain handling agricultural company on a production loan basis to produce 100 hectares of maize (combining finances and marketing/production and price), or from a financing contract with a financial institution. Or you acquire a contract to produce broiler chickens for a specific processor; you become a so-called “grower”. Under these circumstances you are under legal obligations to produce what was agreed to.

Remember

- In terms of a business everything, everybody involved with the business, be it owner/s, managers or employees, affect the profit (in other words they affect income and/or expenditures) of the business.
- When you have borrowed money, most of the time the crop is seeded as security for the loan and must be produced as agreed upon.
- Contracts, whether written or verbal, are binding, even production contracts.
- When you have borrowed financial means, of whatever nature, some way or the other, it must be paid back, normally with interest added on.



This publication is made possible by the contribution of the Maize Trust.

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DESIGN, LAYOUT AND PRINTING

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PULA IMVULA IS AVAILABLE IN THE FOLLOWING LANGUAGES:

English,

Afrikaans, Tswana, Sesotho,
 Sesotho sa Leboa, Zulu and Xhosa.

The importance of proper farm management

Positive conduct

- Positive conduct would be to produce as agreed to within the specific contract.
- Sometimes these contracts include inspection clauses, in other words per contract you have agreed that the applicable institution are permitted to inspect your lands at certain stages of the production. Positive conduct would be to permit these inspections when requested or even invite the institution to visit you.
- Or report on your production out of your own free will.
- When you experience a difficulty with your production process, be honest in your conduct towards the other party and report your difficulty in time. For instance because of the difficulty you might not be able to deliver the agreed upon product, discuss the position with the other party in time. Most probably they will be able to accommodate you or come to an amicable solution.

Negative conduct

- Do not produce less than agreed on.
- Do not produce more than agreed on perhaps in an effort to stretch the production inputs in an effort to make more money. You will be neglecting your crop and might not be able to repay your debt.
- When negotiating a loan, do not claim that you do own the necessary equipment to produce the product successfully, when it is not the case. In other words do not attempt to show that you have the means to work the land or produce the product, when in fact you do not have it.

- Because of negative conduct in the past financial institutions do not provide farmers with physical money any more when they are granted a loan. They might consider it only in highly exceptional circumstances. Today normally farmers have to purchase inputs directly from the financier or by means of an order from the financier who will then settle the account directly with the supplier. When you have received inputs in this way, do not sell some of the inputs privately in order to get some physical money and then neglect the production of your product.
- When you have purchased cattle via some or other scheme and the cattle is then the security to the loan, the same applies. Do not sell some of the cattle to acquire money, you have acquired the cattle to produce a product and repay your obligations.

The result

When you produce according to the production contract you have entered into, cooperate regarding inspections, be honest regarding available equipment and land tenure ship and you will establish yourself as a honourable producer. This will be to the benefit your business in the future. Institutions will be willing and even eager to enter into production contracts with you.

Negative conduct portraying poor business ethics will have the opposite effect. You will find it difficult to obtain production contracts. Positive conduct will portray integrity, trustworthiness, responsibility and honesty.

INFORMATION ADAPTED FROM THE BUSINESS ETHICS COURSE BY MARIUS GREYLING



Our aim is to produce the best publication possible. Please direct any comments on the editorial content or presentation thereof, to Jane McPherson.