WAARBY INGELYF:
OTKaner LK Nuus Natalagri Nuus/News AFGRI Trader

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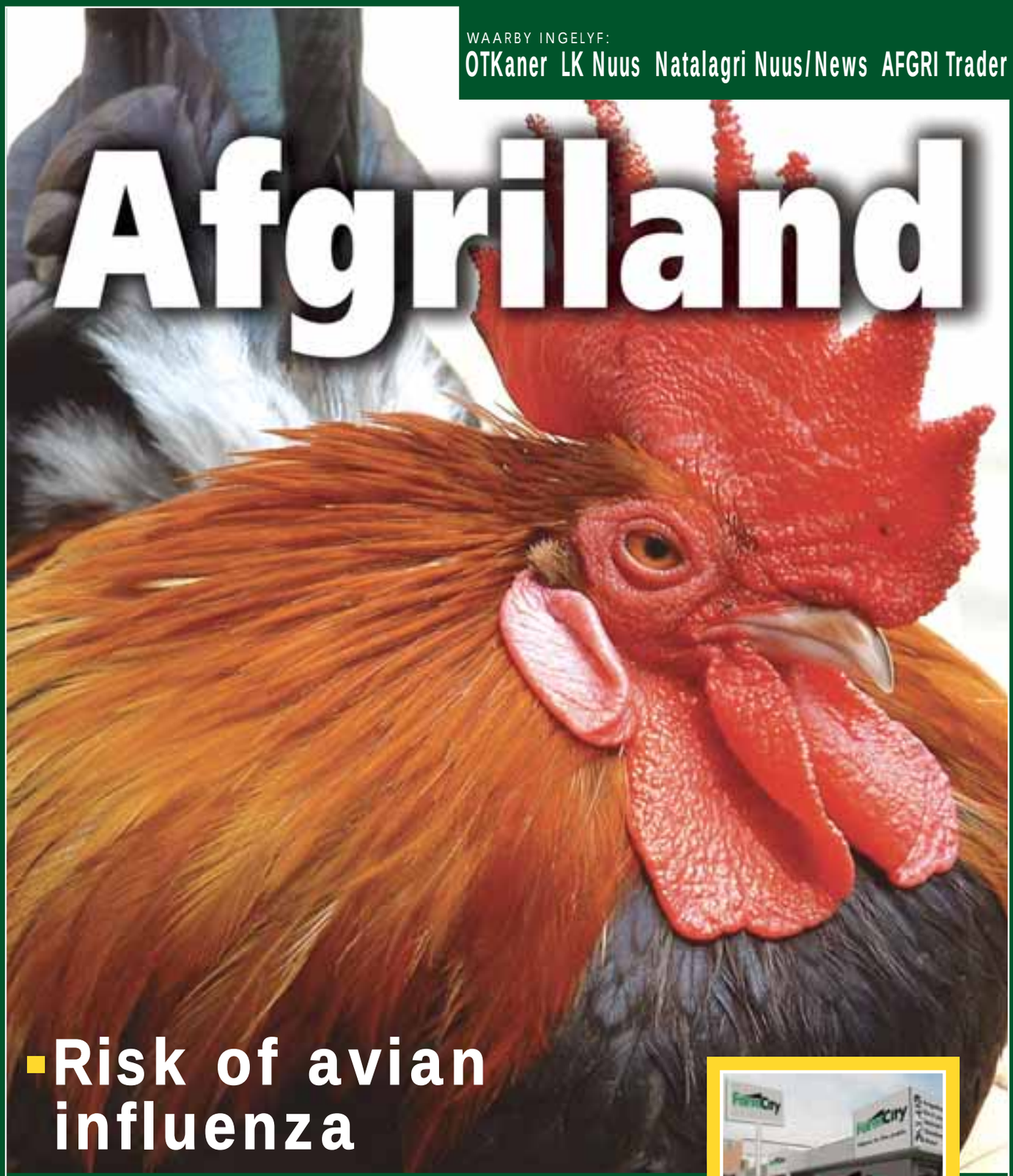


- Risk of avian influenza

- Your KouZiN in agriculture
- Begin 'onder' met SEB
- INTERIM RESULTS

- Wat die SA verbruiker wil eet
- Implications of climate changes

Januarie/Februarie 2006 Vol 50 No 1 RSA R22.00 (BTW ing)

Elna Schoeman wen die derde en laaste kopie van *AGRED se Jagvoëls van Suid-Afrika* vir haar brief waarin sy 'n beroep doen op die landbougemeenskap om saam te staan en met een stem te praat. Lees meer oor die pragboek op bl. 60.

B R I E W E

Kontakadresse: E-pos: afgriland@bigdoor.co.za of skryf aan Die Redakteur, Afgriland, Posbus 2779, Brooklyn Square, 0075. Sluit asb u naam en adres, sowel as 'n faksnommer of e-posadres in. Die redaksie behou die reg voor om briewe te redigeer ter wille van duidelikheid of spasiebeperkinge.

WAT HET GEWORD VAN 'EENDRAG MAAK MAG'?

As 15 rugbyspelers 'n span word en saamspeel is hulle onstuitbaar. As 30 stemme mooi saamsing word dit 'n hemelse koor. As 6 manne hakke vasskop en ritmies saamtrek met 'n dik tou onder die arm, trek hulle swaargewigte onderstebo!

Vanuit die sportwêreld, die geskiedenis, die Bybel en uit daaglikse ondervinding weet ons mos 'een van gees en een in strewe' is 'n geweldige krag.

Van hierdie soort saamstaan sien ek min in ons landbougemeenskap. Ons staan saam om die braaivleisvure en sweep mekaar op of praat mekaar in die *doldrums* in. Maar van 'n verenigde front wat kollektief op die regte plek sy stem laat hoor is weinig sigbaar.

Die **Wet op Swart Ekonomiese Bemagtiging** is reeds baie billiker as aanvanklik omdat dié wat geraak word kollektief gereageer het. Daar is egter nog skaafwerk... gaan ons saamstaan in eie belang?

Daar is maatreëls en wette wat ondeurdag en kontraproduktief is waaroor die totale landbougemeenskap saam sy stem sal moet dik maak.

Die **Wet op Verblyfreg en Sekerheid** is 'n voorbeeld. Dit is mos onbillik om mense wat op die plaas werk 'n huis te ontsê ter wille van die kleinkinders, verlangse familie of plakkersvriende van afgestorwe arbeid wat eens daar gewoon het. Hierdie vreemdelinge werk by ander instansies of werk glad nie en lewer geen bydrae tot die produksie van die plaas nie. Inteendeel, hulle is dikwels plunderaars tot groot frustrasie van lojale plaasarbeiders.

Gaan ons bly swyg oor **invoerbeskerming** wat Suid-Afrikaanse bedrywe kniehalter en selfs toemaak? Dit benadeel alle bedrywe, ook gevestigde en opkomende boere. Die Regering sal werkloosheid beter hokslaan as dié maatreëls hersien word eerder as om die klimaatverandering te probeer aanspreek. (Voorblad van *AgriNews* Okt 2005)

Die **Wet op Minimumlone** help ook nie om meer mense in diens te neem nie. Ek bly onseker: word onwettige immigrante nou teruggestuur of verwelkom deur die Regering?

Gaan die **Wet op Grondbelasting** beter dienste vir die landbousektor meebring of gaan dit kleiner boerderye toemaak? As boere bankrot speel neem werkloosheid toe en die platteland ontvolk. Dit raak die skool, die kerk, die apteek, die hardewarewinkel, saadmaatskappy en klerewinkel op die dorp. Kan ons stede nog mense hanteer?

Ek dink hierdie sake moet hard en duidelik gedebatteer word. Waarskynlik doen hoofbesture dit êrens, baie beskaafd, agter toe deure. Die effek gaan egter groter wees as alle belanghebbendens op een voertuig klim en saam die basuin blaas. AFGRI is vir my die logiese voertuig met 'n trotse rekord en inspraak op die hoogste vlak. Dit lê egter in ons hande om die organisasie 'n sterk, viertrek-, V8-voertuig te maak.

Die fatalistiese houding van 'hulle' wat 'ons' wil bykom het soos 'n nat waslap op Afrikaners kom lê en al ons fut geblus. Ek wil my verstout om te sê: toe ons nie meer die hoofrol het nie, wil ons nie meer saamspeel nie.

Niemand het ons burgerskap weggeneem nie. Niemand het ons grondwetlike reg weggeneem nie. Ons het tog vryheid van pers en spraak. Dit is 'n demokratiese land. Maak jouself onmisbaar. Moenie langer jou inspraakforum prysgee nie. Raak dinamies betrokke by georganiseerde landbou en politiek, veral op munisipale vlak waar dit so beroerd gaan.

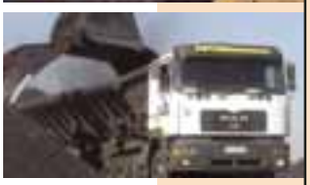
Ons gaan tog almal eendag verslag doen oor ons rentmeesterskap, so kom ons beskerm ons eie belang op 'n verantwoordelike wyse sonder om ander te na te kom.

Onthou: *The squeaking wheel gets the oil*.

Elna Schoeman, Schoeman Boerdery

KORTLIKS

Meet melkkoeie se voeromset
Vir die melkboer is die berekening van die voeromsetverhouding 'n belangrike maatstaf.
Bl 34

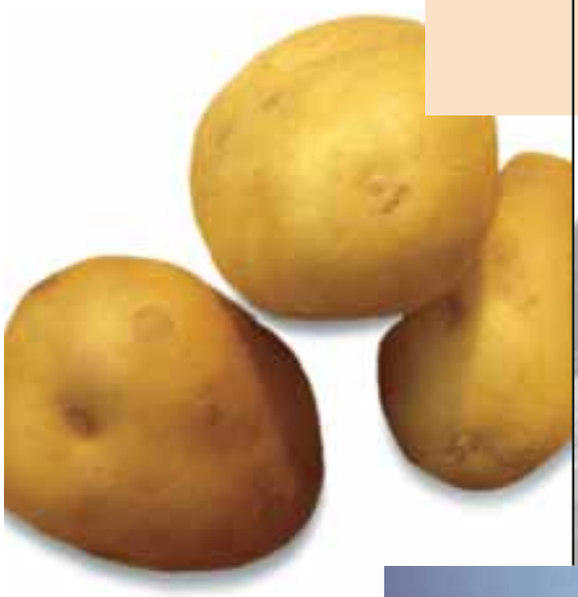


Much more than maize
AFGRI Logistics diversified its business into other sectors.
Bl 32

Bl 36

r-BST in dairy cows
Milk from cows treated with the hormone r-BST is safe for human consumption.

Olifante op wildplase
Om dié diere aan te hou bring groot verantwoordelikhede mee.
Bl 33



Bl 38

BEAT THE SOFT ROT BACTERIA
These bacteria can be controlled by prophylactic and cultural methods.

CHANGES IN CLIMATE
Farmers should be adaptable to climate variability.
Bl 18

Bl 14

DON'T NEGLECT DRINKING WATER
Acceptable palatability does not necessarily imply good quality water.

WAT DIE SA VERBRUIKER WIL EET
Wêreldwyd word verbruikers al hoe meer gesofistikeerd in hul keuses van die kos wat hulle wil eet.
Bl 10

Die pluimveebedryf is om verskeie redes in die nuus: kommer oor voëlgriep (artikel op bl 12), hoenderprodukte speel 'n rol in verbruikers se veranderende kosvoorkeure (artikel op bl 10) en AFGRI het weer die braaikuikenbedryf betree deur sy verkryging van Daybreak Farms (artikel op bl 9).

I N H O U D

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Strategy to diversify bears fruit

UNCERTAIN AGRI-CLIMATE IMPACTS ON RESULTS

AFGRI's new acquisitions are expected to have an increasingly positive impact on the group's business in the six months till 28 February 2006, but the company will continue to focus on further cost reductions in the drive for a lower fixed cost base.

Jeff Wright, managing director, said the agricultural climate was expected to continue to depress commodity prices and farmer spending. Uncertainty in the maize industry had a major influence on AFGRI's financial performance for the six months ended 31 August 2005.

Although the group reported a 16,9% increase in headline earnings per share, revenue declined by 8,5%.

Wright explained that if the figures were adjusted for 2004's disposal of the Early Bird Farm broiler business and the Natalagri acquisition, revenue had in fact almost remained constant.

During the period under review, AFGRI's underlying businesses, Clark Cotton and Natalagri, were restored to profitability and this bolstered the results.

Wright said the summer planting area faced a highly unusual set of circumstances at the start of the new season. A bumper crop from the previous season, together with the strong rand, depressed the price to just under R600/ton for March 2005. Furthermore, the summer rains were late and between low commodity prices and a concern over a possible drought, farmers were not motivated to plant.

Farmer sentiment had a negative effect on AFGRI's Retail and Financial Services businesses.

Revenue in the Retail division fell by 9% overall. The pure retail business was on par with the same period in the previous year and sales of non-planting agricultural products improved, but sales of core agricultural inputs such as seed and fertiliser were down and equipment sales were 45% below the same period the previous year.

'Recognising that agriculture is a cyclical business, AFGRI's retail strategy is to at least break even during downturns,' said Wright. AFGRI reduced fixed costs significantly by closing 12 marginal and loss-making stores during the six months, which brings the total retail closures to 25. 'Customers of closed stores are serviced from the nearest outlet. This rationalisation improves the future health of our retail operations,' said Wright.

Cash utilised by operating activities of R112 million for the six month period reflected higher working capital as a result of slower retail sales. Stock levels are being aligned to sales but this takes time, said Wright.

Financial Services was under pressure as a result of lower grain prices. This led to lower utilisation of grain debtor facilities and reduced bad debt recoveries. The business was also negatively affected by significantly lower agricultural equipment hire purchase sales.

Dominic Sewela, deputy managing director of AFGRI, said strategic initiatives for Financial Services include to grow corporate business by 35%; create and grow structured finance business by creating value-added solutions for customers; and to diversify the insurance broking business.

As of 31 August 2005 the cash position was still a positive R38 million. The interest cost was higher than in the same period in the previous year due to the weakened cash flow.

AFGRI spent R58 million in facility upgrades, new technology and the establishment of an animal feed plant in the Western Cape. The feed mill, commissioned on 1 October 2005, has an annual capacity of 150 000 tons.

ACHIEVEMENTS
'Within the overall performance there were pockets of achievement,' said Wright.

AFGRI's silos have been at record levels of utilisation and are benefiting from the storage of the bumper crop. The Logistics business consequently performed well despite margins coming under pressure due to some discounting of prices to provide relief to farmers.

Farm City performed well and the development of another outlet in Gauteng has been approved; Natalagri made a small profit, recovering from a loss in the same period of the previous year; and Laeveld Korporasie (LK) almost doubled its profit.

Wright said that the strategy to move to new geographies and into new agricultural products helped reduce the risk of seasonality to AFGRI's profits. This was proven correct by the results of LK (acquired in 2002) and Natalagri (acquired in 2004) in a period when the grain reliant business of the old OTK and SOK performed poorly as a result of significantly reduced sales of agricultural equipment, chemicals, fertiliser and seed.

Wright added that the group's Australian business reflected an acceptable profit performance.

The Products business increased revenue mainly due to improved cotton sales achieved through the slight weakening of the rand exchange rate.

Revenue trebled off a low base in the Malawian and Zambian subsidiaries. 'These made significant strides towards achieving a positive contribution to the group,' said Wright.

PROSPECTS
Wright said he was confident about the future of agriculture in South Africa. The difficult circumstances in the sector fast-forwarded AFGRI's existing strategy to diversify.

AFGRI has not yet found a suitable asset to acquire in the Western Cape, but Wright said he had no doubt that there will be opportunities.

According to Sewela, Handling and Storage, Logistics and Trading are expected to do well in the six months ended 28 February 2006, while performance improvements are expected in Producer Services and Financial Services.

The risks involved are the hectares planted in the summer season, the weather, the exchange rate and the maize price.

Highlights: 1 March 2005 – 31 August 2005
- Clark Cotton and Natalagri restored to profitability
- Headline earnings per share up 16,9%
- Dividend remains at cover of two times: 9,05 cents per share
- Retail revenue down 9%
- Directs 6% down
- Spares 21% down
- Equipment 43% down
- Retail unchanged
- Working capital increased.

Retail good news
- Farm City now well established and profitable
- LK operating profit increased by 67%
- Natalagri at breakeven.

Back in the broiler industry

With the acquisition of Daybreak Farms for R110 million AFGRI is back in the broiler industry.

This follows after AFGRI sold its stake in Early Bird Farm in 2004 because of shareholder agreement restrictions and conflict of interest with its partner Astral.

'It was always our intention to re-enter the broiler market when a suitable opportunity arose,' says AFGRI Products CEO Louis Wolthers. 'The broiler industry constitutes 40% of the total South African protein market and over 50% of animal feed consumed.'

AFGRI Products is a major player in the animal feed business in which competitiveness depends on vertical integration of the animal feed and broiler businesses. In terms of its agreement with Astral to sell Early Bird Farm, AFGRI negotiated a 10-year feed supply agreement with Early Bird Farm to allow it time to develop its broiler strategy.

Daybreak processes 500 000 birds a week and offers an unhindered growth opportunity. 'We aim to use Daybreak as a growth vehicle to get back to our position of one million broilers a week.'

Wolthers says there is still considerable growth left in the broiler market. 'As personal income levels improve, the tendency to consume more protein in pursuit of a healthier lifestyle increases. In South Africa this tendency is clearly evident in consumption statistics and the increase in protein consumption has largely come from chicken.'

Two industry challenges that AFGRI analysed before acquiring Daybreak are avian (or bird) flu and foreign imports.

'Over the years the South African poultry industry has developed high standards of environmental and biosecurity to prevent the spread of disease. Daybreak's operations are also well dispersed, which further minimises the risk of disease.'

Regarding foreign imports, Wolthers says the dramatic economic growth in the East, particularly China, has driven global demand for chicken, minimising the possibility of cheap imports.

**** The acquisition of Daybreak is subject to Competition Commission approval.***

Wat die SA verbruiker wil eet

Hester Vermeulen, Departement Landbou-ekonomie, Universiteit van Pretoria

Wêreldwyd word verbruikers van alle kommoditeite toenemend gesofistikeerd en al hoe kieskeuriger en die voedselverbruiker is beslis nie by die tendens uitgesluit nie.

Ook in die Suid-Afrikaanse voedselmark sal voedselprodukte in die toekoms aan sekere belangrike vereistes moet voldoen om verbruikers se komplekse behoeftes te bevredig.

In die nuutste wêreldwye ACNielsen-opname oor voedselverkope by supermarkte, wat 77% van die wêreldbevolking gedek het, is 89 voedselkategorieë in 59 markte (insluitend Suid-Afrika) bekyk.

Op globale vlak het verbruikers aangedui hulle vereis ‘n voortgesette fokus op voedsaamheid en voedselveiligheid, het ‘n groter behoefte aan geriefsvoedsel en dat supermarkte se handelsmerke ‘n toenemende impak het.

In 18 van die 24 voedselkategorieë wat wêreldwyd groei getoon het, het verbruikers se fokus op gesondheid en gewigsverlies ‘n rol gespeel. Hulle verkies byvoorbeeld eiers as deel van diëte met lae koolhidrate en hoë energie, bevrore vrugte en vars groente as alternatiewe bronne van stapelvoedsel, gebottelde water as ‘n gerieflike gesonde drankie en gesonder peuselhappies soos graan, muesli of vrugtestafies (Fig 1).

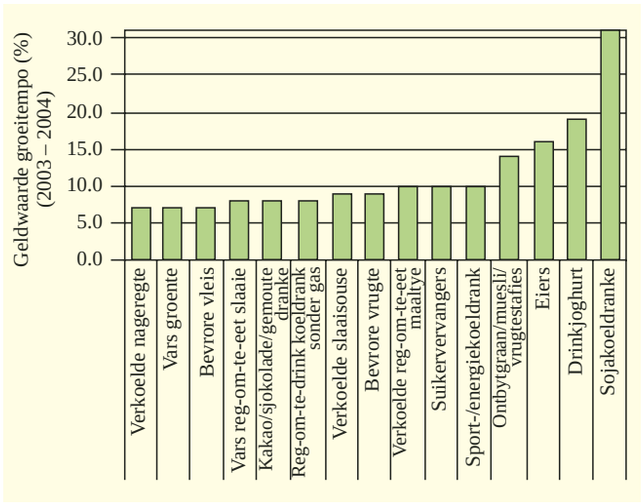
Die versnelde lewenstempo en ‘n gepaardgaande behoefte aan gerief speel ook ‘n rol binne die voedselkonteks. Produkkategorieë wat groei getoon het en aansluit by die geriefneiging sluit in reg-om-te-eet maaltye en bevrore pizza.

In die meeste ontwikkelde lande word supermark-handelsmerke geassosieer met duurder produkte van hoë kwaliteit. Dit het daartoe bygedra dat produkte wat bemark is onder supermarkhandelsmerke bygedra het tot groei in sekere produkkategorieë, soos sport-/energiedrankies in Engeland en aartappelskyfies in Chili.

REËNBOOG VAN SMAKE

Die prominentste neigings in die Suid-Afrikaanse voedselkonteks, veral onder middel- en hoë welvaart-verbruikers, is:

- gesondheid (bv dieetvoedsel, natuurlike voedsel, organiese voedsel)
- gerief
- ‘n toenemende bewustheid van voedselveiligheid
- ‘n toenemende bewustheid van geneties gemodifiseerde voedsel, asook ‘n soeke na genot, smaaksensasies en voedselsofistikasie (voedsel wat stylvol en kompleks is).



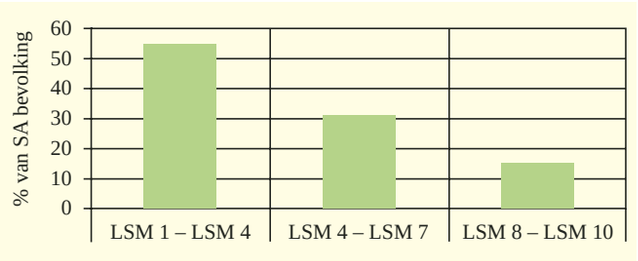
Figuur 1: Belangrikste internasionale groeikategorieë (Bron: ACNielsen, 2005)

Suid-Afrika se reënboognasie met sy 11 amptelike tale en wye verskeidenheid kulturele denominasies versprei oor landelike en stedelike gebiede maak dit baie moeilik vir bemarkers om alle Suid-Afrikaanse verbruikers as ‘n eenvormige marksegment te hanteer.

Om hierdie diversiteit aan te spreek het die SAARF (*South African Advertising Research Foundation*) ‘n hulpmiddel vir marksegmentering ontwikkel wat bekend staan as die LSM-klassifikasie (*Living Standard Measures*).

Dit verdeel die Suid-Afrikaanse bevolking in 10 verbruikersgroepe gebaseer op hul welvaartvlakke. Mense in die laagste welvaartklas val in LSM 1 en dié met die hoogste welvaart in LSM 10. Die grootste deel van die bevolking val in die laer LSM-groepe (Figuur 2).



Figuur 2: Relatiewe groottes van LSM-groepe in Suid-Afrika (Bron: www.saarf.co.za)

Die welvaartgroepe het nie almal dieselfde houding teenoor voedsel nie. 'n Studie deur TGI (*Target Group Index*) het belangrike verskille uitgewys. Die studie het die Suid-Afrikaanse stedelike bevolking in drie groepe verdeel: LSM 2, 3 en 4; LSM 5, 6 en 7; en LSM 8, 9 en 10. LSM 1 is uitgesluit aangesien die groep in landelike gebiede woon.

Die armste verbruikers (LSM 2, 3 en 4) se houding teenoor voedsel sluit menings in soos 'Gesondheidskos word slegs deur fanatici gekoop' en 'Alle wegneem-etes is gemorskos'. Hulle eet hoofsaaklik vegetaries, waarskynlik omdat hulle nie vleis kan bekostig nie. Hierdie groep ag prys, bekostigbaarheid en ligging as die belangrikste faktore wanneer hulle 'n winkel kies.

Die middelklas-verbruikersgroep (LSM 5, 6 en 7) se houding reflekteer gesonde eetgewoontes. Hulle maak daarop aanspraak dat hulle baie versigtig is ten opsigte van hul gesondheid en dus gesondheidsoorwegings in ag neem in hul voedselkeuse. Hulle is bereid om meer te betaal vir voedsel sonder kunsmatig bygevoegde middels.

LSM groepe 8, 9 en 10 het binne die LSM-spektrum die hoogste vlakke van sosio-ekonomiese status. Hierdie verbruikers is meer geneig tot verwenning in terme van voedselverbruik.

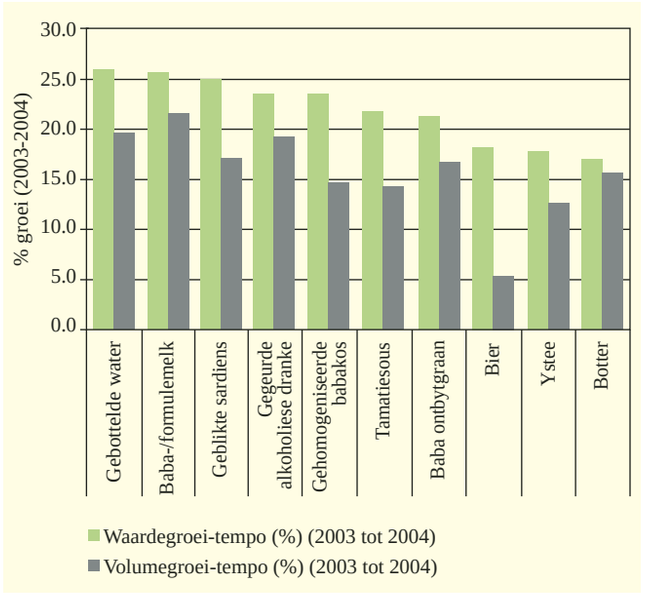
Hulle is besonder sterk gefokus op gesondheid geassosieer met hul voedselinname. Hierdie verbruikers probeer om baie vesel in hul eetplan in te sluit, gebruik dieetprodukte en vermy vetterige kos om gewig te verloor.

Gerief is 'n dryfveer van hul voedselkeuses aangesien hulle 'n behoefte het aan maaltye wat maklik voorberei kan word. In terme van winkelkeuse is gerief ook 'n oorwegende faktor. Hulle baseer hul keuse tipies op die beskikbaarheid van parkering, 'n groot aantal betaalpunte om tyd te spaar en vorige winkelervarings.

SA GROEIKATEGORIEË

Die resultate van die Suid-Afrikaanse komponent van die ACNielsen-opname word in Figuur 3 getoon.

Die Suid-Afrikaanse groeitendense toon minimale ooreenkomste met die wêreldwye tendense soos getoon in Figuur 1. Die belangrikste waarnemings in die Suid-Afrikaanse mark het betrekking op gebottelde water, alkoholiese dranke en babavoedingprodukte.



Figuur 3: Belangrikste groeikategorieë in die Suid-Afrikaanse voedselbedryf (Bron: ACNielsen, 2005)

Gebottelde water se geldwaarde het 'n dramatiese toename van 26% getoon. Gegeurde alkoholiese dranke en bier het ook noemenswaardige geldwaardegroei getoon (24% en 18% respektiewelik). Die feit dat baba-/formulemelk, gehomogeniseerde babakos en babaontbytgraan onder die top sewe Suid-Afrikaanse groeikategorieë is dui op die waardegroei in die babavoedingbedryf.

PRODUKTE VAN DIE TOEKOMS

Die beskikbaarheid van voedsame bekostigbare voedsel is van kardinale belang vir die toekomstige voedselsekuriteit van verbruikers in Suid-Afrika se lae welvaartskategorie.

In die middel- en hoë welvaartskategorieë word Suid-Afrikaanse verbruikers se vereistes al meer kompleks. Hoe sou die ideale toekomstige voedselproduk vir hierdie verbruiker kon lyk? Dalk 'n allesomvattende reg-om-te-eet wondervoedsel met ongelooflike smaak, geen kilojoules, geen vet, geen suiker, 'n hoë veselinhoud, geen kunsmatige byvoegsels, geen GM bestanddele, geen allergene en 'n volledige spektrum van natuurlike mikronutriënte.

Is dié konsep vergesog? Dit is verseker 'n tegnologiese uitdaging maar die verbruikers se behoeftes sal dikteer en die toekoms sal leer.

Vir navrae, kontak Hester Vermeulen by (012) 420 3251 of stuur e-pos na hester.vermeulen@up.ac.za

Bronne:

www.acnielsen.com, www.saarf.co.za, www.tgisurveys.com

Avian flu
Risks and Reality

Dr Baltus Erasmus, Avimune

Human influenza is caused by influenza virus serotypes A, B and C. Influenza A viruses are, however, not restricted to humans and may also infect horses, pigs, birds and some other species. In fact, water birds may be regarded as the primordial host for all influenza A viruses.

Two avian influenza (abbreviation: AI) virus subtypes possessing the H_5 and H_7 haemagglutinins are of particular significance. These two subtypes have on several occasions changed (mutated) from low pathogenicity (LPAI) to highly pathogenic (HPAI) viruses with the ability to kill virtually all fowls that become infected. The dreaded H_5N_1 subtype which has been prevalent in South East Asia since 1997 and which is currently spreading towards Europe, is one such example.

The cradle of AI seems to be Asia and the main hosts are water birds, particularly wild ducks, geese and shore birds such as gulls and terns. Infection in these bird species is generally subclinical with virus replicating in the gut and vast numbers of virus particles being excreted in the dung for up to 30 days. In some species, such as mallard ducks, up to 60% of juveniles may be infected prior to migration. Infected migratory birds often commingle with other free-flying or land-based birds along their fly-ways, exchanging their load of AI viruses in the process. AI virus infection can be seen as a kind of relay race, involving many bird species. A particular country therefore does not have to be on a major migratory path-way to become infected with AI.

Infected water birds contaminate dams and other open water sources. Local water fowl may become infected and these in turn infect domestic poultry such as ducks, geese, fowls, turkeys and quail or ratites such as ostrich, emu and rhea with which they may come in contact.

Certain species such as ostriches, turkeys, domestic ducks and geese, as well as free-range fowls are at greater risk of making contact with wild water fowl and thereby becoming infected with AI virus. Such species may then in turn act as a link and infect poultry in commercial operations, often with devastating consequences.

CLINICAL SIGNS

The clinical manifestations of AI infection in fowls depend on the pathotype of virus (LPAI or HPAI). LPAI virus primarily affects the respiratory, digestive, urinary and reproductive organs. Apart from general signs such as depression and decreased feed and water consumption, affected chickens may also show coughing, sneezing, gurgling and decreased egg production. The mortality rate can be variable, ranging from zero to occasionally over 50%, depending on exacerbating conditions such as *colibacillosis*, *mycoplasmosis*, etc.

HPAI virus affects multiple organs. Clinical signs include marked depression, complete cessation of eating, drinking and laying. The death rate is extremely high and affected birds die within one to two days after the onset of disease.

RISK AND CONTROL MEASURES

AI poses a risk to practically all poultry producing countries. However, this risk can vary tremendously and the prevalence as well as the magnitude of potential outbreaks are influenced by various factors, some of which can be efficiently managed.

The risk of entry of AI virus through the importation of live poultry or poultry products is efficiently managed by government regulations controlling such importation. Nothing can, however, be done to prevent migratory birds from introducing AI virus to South Africa but several measures can be taken to prevent exposure of domestic birds to viral infection.

Although costly, strict biosecurity is the single most important measure that could safeguard poultry, not only from AI infection but also from various other infections such as Newcastle

disease. The following are only a few of the most salient points regarding biosecurity.

The most important consideration is to prevent infection of fowls, and if some chickens become infected, to prevent spread of the infection to other houses and sites.

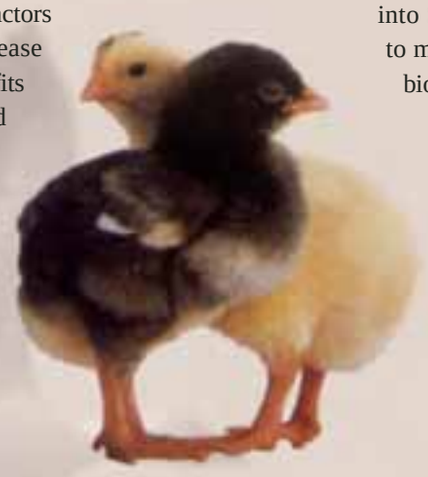
Housing should be constructed in such a way that no wild birds can gain entry to chicken houses. This also applies to smaller birds such as sparrows which, although not particularly susceptible to AI, can effectively transmit the infection to chickens. Sparrows may also carry infected dung on their feet or AI virus on their feathers, thus acting as mechanical vectors. Similarly all workers or visitors to chicken houses should preferably shower and don clean clothes and footwear before entering chicken houses.

Chicken houses should be sited away from ponds, dams, canals or other sources of open water to reduce the risk of wild water birds near poultry houses. Untreated water from open sources should never be used.

Chicken houses should be built as far away as possible from urban development, major roads, be properly fenced off with entrance only through security gates, and traffic should be reduced to a minimum. Delivery trucks should preferably deliver large batches of feed to silos on the farm. This will allow dedicated deliveries without prior visits to other farms. Feed trucks should be cleaned and disinfected at the feed factory and again upon entering the farm.

Buyers of spent hens should not be allowed on the farm. Such fowls should rather be taken to a neutral point off the farm where reloading can take place.

The ultimate success of biosecurity measures depends on the degree of compliance of the personnel. Education and clear, regular communication are key factors in determining people's perception of disease risks, their assessment of the potential benefits of biosecurity and their eventual wholehearted and voluntary support of the respective measures. Regular audits should be performed by management, coupled to attractive incentive schemes to enhance compliance. Furthermore, farm workers should not be allowed to keep pet birds or back-yard poultry.



Early detection of AI virus infection in wild birds as well as in poultry will be of major significance as an early warning to allow implementation of relevant control measures. Passive surveillance (detection of AI viruses and antibodies as part of routine diagnostic work) is already prescribed by the National Department of Agriculture. However, active surveillance aimed at recognizing AI virus infections in water fowl and shore birds is even more essential. The sooner control measures can be instituted the better the chances of preventing infection of domestic poultry and the associated risk of viral mutation.

Open and honest communication both nationally, regionally and internationally will similarly facilitate control of AI in all species (including man). The more recent outbreaks of H_5N_1 in East Asia have already led to a greater degree of involvement of knowledgeable individuals and international organisations such as the World Health Organisation (WHO), the Food and Agriculture Organisation of the United Nations (FAO) and the World Organisation for Animal Health (OIE).

VACCINATION

Vaccination is one of the most efficient and cost-effective measures against infectious diseases in man and animals. Strategic vaccination, especially of primary breeder, parent and commercial replacement pullet flocks with high quality vaccine, is seen as one of the best insurance policies to safeguard the poultry industry against the devastating effects of a highly pathogenic AI infection. Current policy of the National Department of Agriculture does not allow the prophylactic use of H_5/H_7 AI vaccine but development elsewhere in the world may eventually lead to changes in this policy.

CONCLUSION

A perusal of all the facts available leads to the conclusion that, despite the risk of AI virus being introduced into South Africa, it will not necessarily lead to major losses provided the strictest possible biosecurity measures are implemented. Proper management of such a risk should reduce the potential of serious losses to a level where profitable broiler production is attainable.

For more information, write to Avimune (Pty) Ltd, PO Box 14167, Lyttelton, 0140.

DON'T neglect drinking water

Dr Jan Myburgh, Faculty of Veterinary Science, Onderstepoort

For successful and sustainable livestock production the provision of adequate water in terms of quantity as well as quality is essential.

Of the nutrients indispensable to life, water ranks second only to oxygen in importance. Fresh, clean, abundant and an easily accessible supply of water must at all times be available to livestock.

If the available drinking water appears to be relatively clean and doesn't taste too bad it doesn't necessarily mean the quality is acceptable. A good example is fluoride that doesn't affect the palatability of drinking water but can cause serious health problems in livestock and humans.

Water is often provided to livestock based on the incorrect perception that acceptable palatability implies good quality. Murky water or water with an unpleasant odour may be safe to drink, whereas clear water may contain pathogens or potentially hazardous constituents.

Livestock water requirements are influenced by environmental factors such as ambient temperature, body size and level of production. Dietary factors such as type of ration, dry matter content and the concentrations of protein, inorganic salt and other minerals also influence water needs. High roughage diets could increase water requirements by increasing the loss of water in faeces and urine.

On the other hand, low water intake reduces dry matter intake (DMI). A decrease of 50% in voluntary water intake can reduce milk production by 50% and body weight by 14% after four days. In such circumstances cows behave aggressively around the water trough and spend less time lying down than cows with unrestricted supply.

Providing fresh cold water during periods of extreme heat stress, especially in the afternoon after milking, can reduce body temperature and increase milk production.

During summer months cows provided with no shade consume 18% more water per day than those with shade. Providing an abundant supply of fresh clean water contributes to increased milk production. A dairy cow needs roughly liters of drinking water per kg milk produced, while drinking water should always be provided to calves to enhance growth and DMI.

PALATABILITY

Palatability and acceptability of a specific water source may also influence the volume of water taken in per day. Water quality constituents (WQCs), singularly or in combinations, can affect the palatability of water.

The WQCs of primary concern in this regard are TDS (salinity), chloride and sulphate. Other WQCs may also impart a detectable taste to water and influence the palatability. Levels of WQCs such as nitrates, fluoride and other heavy metals may become toxic prior to significantly affecting palatability.

Livestock generally adapt to adverse palatability but this varies markedly between species and depends on palatability constituents and production system specifics.

Adverse palatability results in an initial reluctance by livestock to consume water. Thereafter they will either adapt to the water or, if not offered an alternative supply, be forced via thirst signals to drink from the available source. Compared to cattle, sheep and goats tend to be more reluctant to consume water with an abnormal odour or taste.

EFFECTS OF POOR QUALITY

Drinking water can also be the source of parasites and hazardous constituents such as minerals, micro-organisms, blue-green algae and chemical pollutants.

Some of the adverse effects associated with the ingestion of poor quality water are a reduction in reproduction efficiency, decreased viability of offspring, poor growth rate, decreased production and reduced resistance to diseases. These usually either go by unnoticed or are easily attributed to other factors such as poor management, nutrition or internal parasites.

A classic example of a water-related problem developing over a long period is *fluorosis*. It causes teeth lesions and bone problems. Extra bone is deposited on the outside of bones and fractures are common. Chronic intake of fluoride makes bones very hard and brittle.

In Picture 1 the bones from the lower parts of both the front legs of a cow are shown. She became lame and was shot after she fractured the toe bones in both her front legs. The fluoride concentration in the borehole water was 15 mg/L. It should be less than 4 mg/L for animal use or 1 mg/L for human consumption.

Picture 1. External bone deposition and fractures of toe bones due to chronic intake of fluoride in drinking water.

Water of poor quality can also result in acute deaths with the most important examples being water containing nitrates and blue-green algae.

Nitrate poisoning is characterised by chocolate-brown blood (Picture 2). The blood is unable to transport oxygen and animals die quickly due to an oxygen shortage in the body. The concentration of nitrate in the water in this case was 1 700 mg/L with the recommended level being less than 400 mg/L. The farmer lost more than 600 cows.

Picture 2. Chocolate-brown blood of a cow that died acutely after consuming water with a high concentration of nitrate.

Drinking water could contain inorganic constituents that may be valuable mineral supplements for livestock. However, high concentrations of and/or imbalances between constituents can cause clinical problems ranging from excesses and inadequacies to induced imbalances. More about this in a future issue.

BLUE-GREEN ALGAE

Cyanobacteria or blue-green algae cause liver failure and have been associated with numerous animal deaths in many parts of the world including South Africa.

Cyanobacteria are widely distributed and indications are that toxicity is possible in any surface water source that can support a cyanobacterial overgrowth or bloom. Seeing that all cyanobacterial blooms are not always toxic, an appropriate diagnostic approach is necessary to investigate outbreaks.

In Southern Africa the most common bloom-forming cyanobacterium is *Microcystis aeruginosa*. The widespread distribution of *Microcystis* indicates a tremendous potential for toxic blooms to develop in major dams, pans, small farm dams, troughs and even rivers should conditions be favourable.

WATERBORNE DISEASES

The role that water plays in the transmission of infectious diseases (bacteria, viruses, etc) affecting livestock, is not altogether clear. However, we know that several infectious agents can survive in water for long periods and that contaminated water-bodies can serve as a source of these organisms eg *E. coli*, *Salmonella* and *Leptospira*.

Waterborne microbiological diseases are typically caused by enteric pathogens which belong to the group of organisms transmitted by the faecal-oral route. They are excreted in faeces by infected individuals and ingested by others in contaminated water or food. Faecal material in drinking water, eg in a trough, could cause animals to either avoid the water source causing suppressed intake or to completely reject the source.

Africa has more than its fair share of water-related parasitic diseases affecting livestock. Parasites of importance where the intermediate hosts (snails) are associated with surface water are *liver fluke, conical fluke* and *bilharzia*. Economic losses are common in areas where the intermediate hosts are present.

CHEMICALS

Large volumes of chemicals such as pesticides, detergents and drugs are manufactured and used worldwide everyday. Some of these chemicals and/or their products eventually become environmental pollutants by ending up in our water sources as a result of run-off from soil and plants, being pumped via sewage into rivers, direct spraying of surface water to control pests, or after industrial accidents.

It was realised only recently that chronic exposure to low levels of some of these chemicals in drinking water can have harmful effects in humans and animals. These chemical pollutants are collectively known as *endocrine disrupters* (EDCs) because they mimic natural hormones, inhibit the action of hormones, or alter the normal function of the immune, nervous and endocrine systems.

To assess the quality of water in terms of its fitness for use, specialists must analyse the water for these water quality constituents.

For more information contact Dr Jan Myburgh at 082 392 2534 or send e-mail to jan.myburgh@up.ac.za

FOCUS ON THE FARMER

‘We expect from our suppliers to become involved. If we bleed, we bleed together.’

AFGRI Producer Services is rationalising its product range to offer mainly agricultural products as part of its focus on primary agriculture and farmers.

At a suppliers’ breakfast Louis Smit, chief executive officer, said Producer Services is in the process of identifying key suppliers with whom it wants to establish long-term partnerships and communicate regularly. ‘We expect from our suppliers to become involved. If we bleed, we bleed together.’

Dominic Sewela, deputy managing director of AFGRI, confirmed this sentiment by saying that AFGRI is looking for a symbiotic relationship with its suppliers. ‘Partnership requires sustainability,’ he said.

Both Sewela and Smit referred to the importance of BEE. ‘To make our life easy, please comply with BEE requirements, as we are committed to comply with the BEE scorecard,’ Sewela told suppliers.

Dominic Sewela, deputy managing director of AFGRI

In an overview of progress with its business strategy, Smit said Producer Services strives towards maintaining stability and minimising change.

Capable regional managers have been appointed and both these and branch managers have been empowered to make decisions on the spot to render a quick and professional service to clients.

To lower overheads and risk in the business, Producer Services exited the Western Free State and the North-West. Producer Services now has 84 retail/spares outlets and 31 workshops in 5 provinces while two new Farm Cities will open in 2006 – one in Gauteng and one in Pietermaritzburg. Smit said the strategic intent is to open one or two new Farm City outlets per year to counter the cyclical nature of the business.

Regarding the John Deere agency Smit said that AFGRI is now a single franchise dealer and has also been allocated the agency in the Lowveld area.

‘We have a vertical growth strategy to increase our market share in those areas where we have the necessary infrastructure and know the environment and the people - there is still big potential for growth,’ said Smit.

Representatives of AFGRI and its suppliers together for breakfast: from left to right are Willem Struwig of Kynoch, dr Moji Mogari of AFGRI Operations, Leon Pretorius of John Deere, Lukas Coetzer of AFGRI Producer Services, Fanie du Plessis of Molatek, and Louis Smit of AFGRI Producer Services.

Changes in climate
IMPLICATIONS FOR AGRICULTURE

Peter Johnston and Mark Tadross
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Climate has always been a topic of popular discussion, especially in countries such as South Africa which are both water-stressed and depend on agriculture in many rural areas. Much discussion has revolved around changes in past climate and the projections of climate change for the later part of this century. Such discussions often polarise between those who believe that climate change does not exist or will not affect South Africa and those who believe that it poses a serious problem for the region. Both camps show data that they claim prove their argument and to the layman the debate can be confusing.

The climate system (including the land and ocean) is complex and the only way of understanding all the possible connections is through the use of mathematical models of this system. These models form the foundation for projections of climate change.

Before discussing climate model projections for the future one needs to understand how the country's climate has changed in the recent past.

Firstly, there have been documented increases in temperatures over most of Southern Africa during the last 30 years or so. In semi-arid environments this leads to more evaporation and drying of soils.

Secondly, rainfall is typically difficult to map spatially and changes in rainfall are often dependent on location, as the position in relation to mountains, the sea, vegetation and lakes can all influence the local climate. For example, from 1950 to 1999 rainfall has increased over the mountains of the Western Cape, but showed little change or slightly decreased over regions at lower altitude. Similar observations apply to the eastern escarpment.

Thirdly, changes may be more obvious and detectable at certain times of the year. For example April is the month that shows some of the largest changes in total rainfall over much of the country. Yet even this may disguise changes in the 'character' of rainfall that may be due to changes in frequency (how often it rains) and intensity (how much it rains).

Documented increases in rainfall intensity have been observed over the Lowveld and similar increases have been observed to compensate for fewer days with rain at some locations. This is important from a farmer's perspective as increases in intensity may lead to increased runoff and stream flow (which can also be promoted by changes in land use), yet not necessarily to increases in soil moisture for agriculture.

Complicating matters further, a large part of the region experiences changes on long timescales. For instance the 1970's was in general a wetter period than the 1960's or 1990's. The start of the summer rains over much of the country followed a similar pattern with rainfall starting on average later during the 1990's than during the 1970's.

Climate change models project similar changes in 'seasonality' but station data for the last few years, which could show whether this trend has continued (possibly due to climate

change) or changed (suggesting other dominant factors), are not easily accessible. Given that the climate is projected to change faster in the future than it has in the past, up-to-date monitoring of the local climate is essential.

SO WHAT OF THE FUTURE AND WHAT MAY IT HOLD FOR FARMERS?

There are many models that have simulated the future climate based upon the expected increases in carbon dioxide. This is one reason why one cannot assume the climate will follow patterns of change similar to that of the recent past.

Each model has been developed by different groups of scientists around the world. For Southern Africa the different projections consistently show an increase in temperature, with a decrease of rainfall towards the west and an increase in rainfall towards the east.

However, the line between drying and wetting is not consistently predicted, mostly because rainfall is the most difficult aspect of climate to simulate. This has lead to different perceptions of what climate change may mean to people and communities within the region. In order to understand the implications for agriculture it is important to also account for changes in temperature and evaporation, which may reduce soil moisture even when there are slight increases in precipitation.

A recent survey of 15 climate model projections shows that for Southern African summers, models more consistently project a decrease in soil moisture than they project changes in rainfall. This suggests that in marginal environments further west, crops requiring more moisture may suffer more than other crops. However, depending on the crop, there may be some benefits from increased temperature (a shorter crop growth cycle) and increased carbon dioxide (more efficient use of water and increased yields).

It should be emphasised that these are general statements and will not apply everywhere, e.g. regions at higher altitude with suitable soils may become viable due to increasing temperatures, as will those places where rainfall increases more than evaporation.

SHOULD FARMERS BE ALARMED AND SEEK TO CHANGE THEIR CURRENT PRACTICES?

In the history of South African agriculture, farmers have continually learnt to adapt to the natural variability of the climate. Crops are mostly grown in the eastern and south-western areas of higher annual rainfall and also where irrigation is available.

In some cases a run of higher rainfall years has led to the exploitation of marginal areas. During drier periods these areas have subsequently been exposed to ‘drought’ conditions and crops and pasture have suffered. Experienced farmers have developed their agricultural activities within the envelope of variability of climate, thus being able to counteract the bad years by making up during the good years.

Seasonal forecasts, drought warnings and advances in agriculture such as drought-resistant seed cultivars and no-till methods have offered many advantages to farmers over recent years. Hedging and option trading on SAFEX are other opportunities for farmers to adapt to uncertainties.

However, with the possibility of climate change causing a shift in temperature and rainfall regimes, farmers will have to pay closer attention to trends, cycles and the resulting changing variability in climate that will affect the current crop selection.

Local climate change will likely be experienced through factors such as an increase in frost-free days, the duration of wet and dry periods, the intensity of rainfall and a shift of the seasons. Changes in the availability of water introduced by these factors will put extra responsibility on farmers. Increased rainfall and general temperature increases may benefit crop yields and possibly even turn some marginal areas into sustainable ones.

However, the economic effects are as yet unknown. Increased supply may cause market prices to drop to levels where certain crops are no longer viable. Farmers should also consider these factors when trying to improve their capacity to adapt.

So the answer to the question is no, farmers should not panic. They should, however, assess their current situation, ability to adapt to present climate variability and what their future options are. This is, as always, a greater priority for those whose lands are currently only marginally sustainable.

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