THE ECONOMICAL IMPACT OF A DROUGHT

by

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Droughts are a normal phenomenon of our climate. It appears everywhere although the intensity may vary from region to region. Whatever the definition of a drought, the consequences are normally that the rainfall are bellow average and that farmers cannot produce their normal production. In economical terms it means that farmers will not only experience a loss of income caused by the lower production but they will also have more than their usual expenses to supplement water supplies and to buy fodder for their livestock.

The definition of a drought for Kenhardt in the Karoo will differ from that of Knysna near the sea. The most common definition is that a drought occurs when the rainfall for a specific region is lower than the normal rainfall for a substantial period, usually measured over one year, causing a shortage in water and moist supplies. Whatever the definition of a drought, it is clear that it is not just a physical phenomenon but also an economical experience.

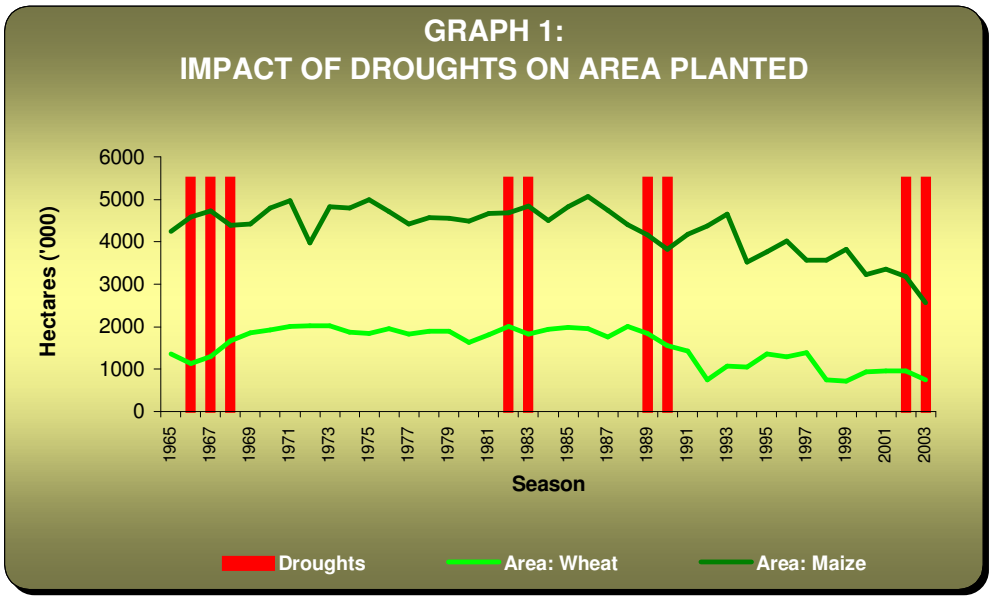
South Africa is currently experiencing a drought, according to the definition. Rainfall for the calendar year of 2003 was below normal and this trend is continuing into 2004. The rainfall outlook for 2005 is also not very positive. The results in comparing 2004 with 2003 are visible in several ways:

- The yield of wheat was 39% lower;
- The area planted with summer crops were 12% lower;
- The water levels of the major dams was 25% lower;
- Several dams on farms were completely empty;
- The available grazing pastures are currently about 30% of their normal capacity.

The physical impact of the current drought is already of such a nature that agricultural produce is seriously hampered and farmers are beginning to feel the economical impact on their financial resources.

Area planted

The economical impact of droughts on cash crops can be illustrated by examples of the maize and wheat crops. Graph 1 contains information for a number of years of the national plantings and also shows when long lasting droughts prevailed in South Africa.

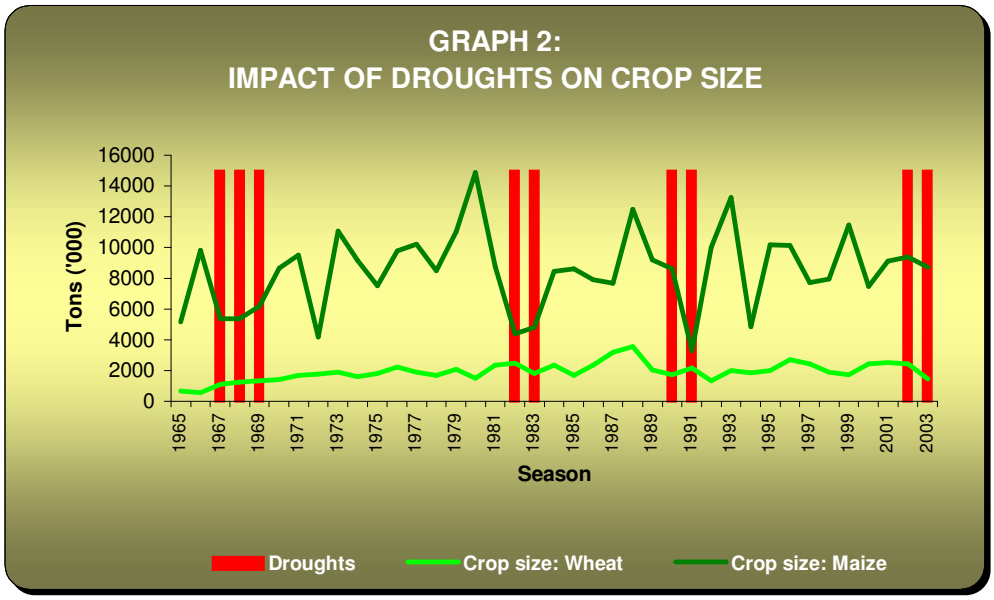


During the droughts of 1966/68 and 1982/84, the areas planted for both wheat and maize remained quite constant. During the droughts of 1989/90 and 2003/04 the areas planted reduced substantially. The available moist during the planting period could have played a role in the areas planted. It could have been that enough rainfall occurred during the planting periods of 1966/68 and 1982/84 and that the drought had a delayed impact during the growing season. The opposite can be true for the two other droughts.

The areas planted show the same trend for maize and wheat. Both these crops also show a continuous decrease since the late eighties, irrespective of the droughts.

Crop size

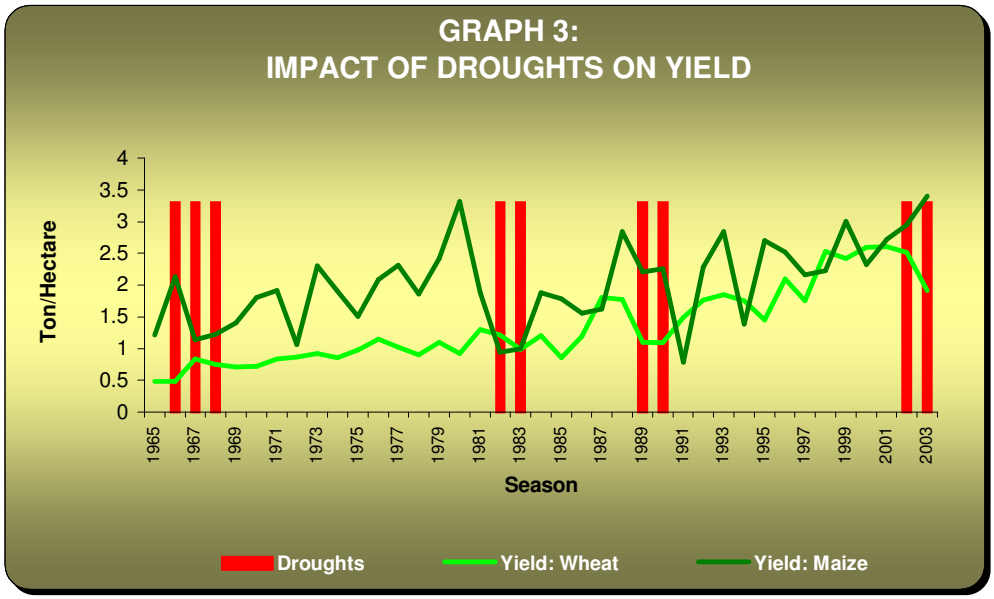
Graph 2 shows the crop size of wheat and maize for the past forty years.



The size of the crop shows a sharp decline during droughts. It also appears that wheat is less variable than maize because there are also substantial variations in the maize crop size even outside drought periods. This is not the case with the wheat crop. The drought of 1982/84 had the biggest impact on the maize crop while the most damage on wheat was caused by the drought of 2003/04

Yield

The impact of droughts eventually reflects in yields (tons/hectare). Graph 3 contains information on the yields of wheat and maize for the past forty years.



The yield (tons/hectare) for both wheat and maize decreased sharply during droughts. The exception was the maize crop of 2003/04 when late rain during the autumn caused a record crop in spite of smaller areas being planted. Once again, the inconsistency of maize also appears in the yield, also outside long lasting droughts. With the exception of 2003/04, the wheat yield is more consistent, even through droughts. In terms of area planted, crop size and yield, the wheat crop was extensively damaged by the drought of 2003/04. The smaller area planted under maize was countered by the exceptional good yield for the same period.

It is also worth mentioning that the yields for both wheat and maize increased noticeably over the past forty years while the areas planted decreased. This is an indication that technology, in the form of cultivars and farming practices equipped the farmer to handle the consequences of the droughts better as far as yields are concerned than was the case twenty years ago. The yield of maize remains unsteady, in spite of the increasing yields. The normally consistent wheat crop suffered a serious blow during 2003/04 when the area planted, the crop size and not even the yield had any resistance to the drought.

Spending

The economical impact of a drought unfortunately doesn't stop with the loss of income experienced by the farmer. Although it causes an enormous impact on the individual farmer's financial resources,

it also cycles out to the local economy of which the farmer is part. The table contains information about the spending of farmers regarding wheat and maize.

TABLE: SPENDING ON EXPENSES FOR MAIZE AND WHEAT

	MAIZE		WHEAT	
Hectares	1	230	1	430
Yield	3.5 t/ha	3.5 t/ha	2.5 t/ha	2.5 t/ha
Expenses	R/ha	R	R/ha	R
Seed	R 333	R 76,590	R 152	R 65,360
Fertilizer	R 610	R 140,300	R 492	R 211,560
Weed control	R 178	R 40,940	R 56	R 24,080
Pest control	R 175	R 40,250	R 120	R 51,600
Crop spraying	R -	R -	R 99	R 42,570
Contract harvesting	R 247	R 56,810	R 304	R 130,720
Crop insurance	R 120	R 27,600	R 592	R 254,560
Transport	R 111	R 25,530	R 80	R 34,400
Fuel	R 177	R 40,710	R 205	R 88,150
Repairs & maintenance	R 696	R 160,080	R 573	R 246,390
Labour	R 76	R 17,480	R 61	R 26,230
Interest	R 85	R 19,550	R 67	R 28,810
TOTAL	**R 2,808**	**R 645,840**	**R 2,801**	**R 1,204,430**

The table shows that an estimated R2,808 per hectare are being spend by farmers to produce maize while the expenses for wheat is slightly less at R2,801 per hectare. According to the financial results of farmers in the Eastern Free State participating in a study group of COMPUTUS, the average farmer cultivates 230 hectares of maize and 430 hectares of wheat per annum. The average farmer in the Eastern Free State therefore spends a total amount of R645,840 on maize expenses and R1,204.340 on wheat expenses in various ways in his local economy. The reducing of areas planted en the lower yields normally means that the farmer will spend less money in the succeeding year after a drought. A drought therefore causes a multiplying effect that has a huge influence in the economy of the local town. In this way a drought eventually has a huge negative impact on the total economy of the country.

Managing droughts

South Africa experiences severe droughts about every ten years, according to statistics. There is nothing the farmer can do to stop a drought occurring. It is the way he prepares himself for a drought and how he manages a drought that determines if a farmer financially survives a drought.

The economical impact of a drought has already been spelled out. The political reality is unfortunately that the South African farmer cannot rely on government aid to survive a drought. Politicians firstly don't really understand the impact of a drought on farmers and secondly, they will rather apply their financial resources where the ballots matter, namely emerging farmers. The commercial farmer will therefore have to cope with a drought on his own.

It is important for the farmer to be prepared for a drought. Financial preparedness is extremely important and this can only be done during prosperous times and not during a drought. The financial resources must be maintained during good times and the farmer should not utilize his credit reserves

to the maximum then. The credit reserves should only be stretched to the limits as a last resort during droughts.

Even a relatively dry season, and not necessarily a severe drought, puts financial pressure on a farm. When using the last drop of financial reserves is inevitable, good decision-making is vital and the farmer should:

- Be objective and calm;
- Gather all relevant information for decision making;
- Prioritise tasks and separate the important tasks form the time wasting tasks;
- Be adaptable;
- Execute the decisions he made;
- Take responsibility for his decisions.

The farmer cannot control the climate but he can plan for it and manage the impact. It will also not help to blame the drought for every thing that went wrong on the farm. The onus is on the farmer to timely prepare for a drought because the current commercial South African farmer is on his own during droughts, how scary this may sound.

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