THE COMPETITIVE POSITION OF THE SOUTH AFRICAN FERTILIZER INDUSTRY IN NATIONAL AND GLOBAL CONTEXT

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In assessing the present state of the local fertilizer industry one is tempted to move into a negative mode. The fertilizer industry, like many other industries, faces increasing international competition, which in itself is a positive phenomena. We also have a government which struggles to define and implement rules related to dumping. We are further subject to a very erratic rainfall pattern and pronouncements from official circles have often lead to more uncertainty in an already uncertain environment.

The fact is, that we today have a farming infrastructure spanning from subsistence farmers to small farmers to commercial farmers and also large companies who are farming very effectively. Serving the needs of these farmers, we have industries that provide quality products at competitive prices. The challenge, however, remains to all those who serve the farmer, to enable the latter to survive and compete in the international arena. In order to fulfil this requirement a continuous introspection is required, and I will share some ideas in this regard with you. Although I received data from the FSSA and am indebted to Mr. Hilmar Venter in particular, the interpretations and viewpoints are my own and do not reflect those of the FSSA in any way.

HISTORY

The fertilizer industry in South Africa took root in 1894 with the establishment of the first bulk blender at Kuilsrivier in the Cape. The development of the industry over time is depicted in Table 1.

A few highlights:

- Superphosphates were the first products to be produced locally albeit not by utilising indigenous rock.
- The first dumping of product took place in 1923 resulting in the closure of a local facility which at that time was already earning foreign exchange.
- Ammonia was first produced in 1933.
- Price control took effect in 1942.
- Foskor was established in 1951.
- Price control was scrapped in 1984.

Today the market is being served by the three main producers, namely Kynoch, Omnia and Sasol Fertilizers as well as a number of smaller blenders, distributors and lime producers. The capacity at present available for production is as follows (tonnes):

- Granulation	2 600 000
- Liquid fertilizers	250 000
- Total	2 850 000
- Bulk blenders	1 600 000
- Phosphate rock concentration	1 350 000 (tonnes P_2O_5)
- Ammonia	910 000
- Sulphur	190 000
- Sulphuric acid	3 100 000

During recent years (Figure 1) local consumption of nitrogen (N) increased relative to phosphates (P) and potassium (K). In absolute terms phosphate sales declined from a peak in 1982 to reach the same level of potassium sales from 1990 onwards. Average NPK-ratio's for the period 1970-1975 was 2,4 : 1,5 : 1 compared with 3,6 : 1 : 1 for the period 1990 through 1994.

SALES VOLUME

Sales of fertilizers to the local market since 1974 are indicated on Figure 2. As can be seen, the annual sales volume reached an all time high of

Table 1. History of fertilizer production in South Africa

1889	First imports of 'complete compound fertilizer'
1894	First bulkblend produced at Kuilsriver : 75% organic, 25% un-organic
1902	Establishing of South African Fertilizer Company (SAFCO)
1903	SAFCO establishes sulphuric acid plant; produce superphosphates
1903-1910	Imports increase from 19 000 tons in 1906 to 26 000 tons in 1910
1907	SAFCO suspends the production of superphosphates due to cheaper imports
1919	Kynoch erects a superphosphate plant at Umbogintwini processing phosphate rock from Egypt
1920-1931	Industry consists of 3 producers, 10 bulkblenders and 8 importers
1921	Capex erects a superphosphate plant at Somerset West with capacity of 18 000 tons/ annum
1922	Capex exports 500 tons of superphosphates to India
1923	Superphosphates dumped in SA from the Netherlands resulting in Capex discontinuing its production
1928	Establishing of the Fertilizer Trading Association
1931	Enlarging capacity at Umbogintwini. AECI produces ammonia at Modderfontein at 12 tons/day
1933	Iscor delivers aqua ammonia to AECI
1933-1937	During the depression fertilizer consumption declined drastically
1937-1945	Fisons Albatros acquires Oskop and Anglo Continental, and establish Fisons SA. Local producers held 60-65% of the local market. Raw materials for the production of superphosphates were imported, as well as 95% of nitrogen requirements. Imports of North African rock phosphates reached 100 000 tons
1938	Fisons Albatros establishes the first granulation plant at the Maydon Wharf
1939	Netherland Fertilizers enters the market
1941	Price control introduced. Maximum prices fixed in May 1942
1942	Subsidy on fertilizers 1 pound/ton
1943	AMCOR establishes a phosphate mine at Langebaan. Shortages of product result in quota's
1943-1945	Superphoshate production increases from 135 000 tons to 255 000 tons per annum
1947	Act 36 of 1947 replaces Act 21 of 1917
1948	Increasing capacity of ammonia production at Modderfontein from 25 000 tons to 75 000 tons per annum
1949	AECI plant at Somerset West increased its capacity to 650 000 tons per annum. Granulation plant commissioned. Estimated number of farmers buying fertilizers reached 70 000
1950	Establishing of Sasol at Sasolburg
1951	Establishing of Foskor at Phalaborwa
1954	AECI No 2 ammonia plant commissioned at Modderfontein

1955	Phalaborwa mine in operation. Sasol produces 50 000 tons of sulphate of ammonia per annum
1956	Production capacity of superphosphate at Umbogintwini and Somerset West increased to 600 000 tons and 200 000 tons per annum respectively. Windmill and Bullbrand erect granulation capacity.
1956-1957	Closing of the Phalaborwa mining operation
1956-1961	Report of the Viljoen Commission
1957	AMCOR produces calmaphos
1958	Iscor produces sulphate of ammonia at Pretoria and Vanderbijlpark
1959	Transvaal Gold Mining Estates produces sulphuric acid at Pelgrimsrus. Fisons produces superphosphates plus NPK compounds at Sasolburg. First sulphur delivered by Sasol
1960	AECI erects urea plant at Modderfontein (110 000 tons per annum). TGME produces superphosphates at Graskop with phosphate rock from Phalaborwa. Price control formula comes into effect: return on operating capital 13,5%.
1961	Report of the Viljoen Commission stating the following: • 15 companies in operation, 25 plants, 2 phosphate rock mines, 4 superphosphate plants, 1 bulkblender inland and 14 bulkblenders situated at the coast; • 260 sales representatives, 460 agents, 357 stockists, 99 co-operatives; • Nett profit of the Industry as percentage of shareholders' funds = 18%; • Nett profit of the Industry as percentage of total investments = 9,3%; • The report acted as a stimulance to the development of the industry
1964	Sasol produces ammonia at Sasolburg. Fedmis produces phosphoric acid at Phalaborwa
1965	Omnia establishes its first NPK-compound plant at Sasolburg
1966	Fedmis erects ammonia and LAN production facilities at Milnerton
1967	Kynoch commissioned sulphuric acid, Boradfields den and NPK-compound facilities at Potchefstroom
1968	Kynoch produces phosphoric acid and MAP at Potchefstroom and ammonia at Umbogintwini. Kynoch close No 1 ammonia plant at Modderfontein
1971	TGME closed down. Omnia produces supers
1974	Omnia increases its NPK-compound capacity. Kynoch commissions No 2 NPK-compound plant at Potchefstroom. AECI commissions No 4 ammonia plant at Modderfontein
1975	Omnia erects phosphoric acid plant at Rustenburg. LAN plant commissioned by AECI at Modderfontein
1976	Iscor produces sulphate of ammonia at Newcastle. IOF commissioned sulphuric acid and phosphoric acid facilities at Richardsbay
1979	Additional ammonia capacity produced by Sasol
1982	Omnia commissioned additional NPK/LAN plant at Sasolburg. Additional ammonia production by Sasol. IOF commissioned NPK-compound plant at Richardsbay
1984	Scraping of price control, AECI suspends ammonia production at Umbogintwini
1993	Additional ammonia production by Sasol

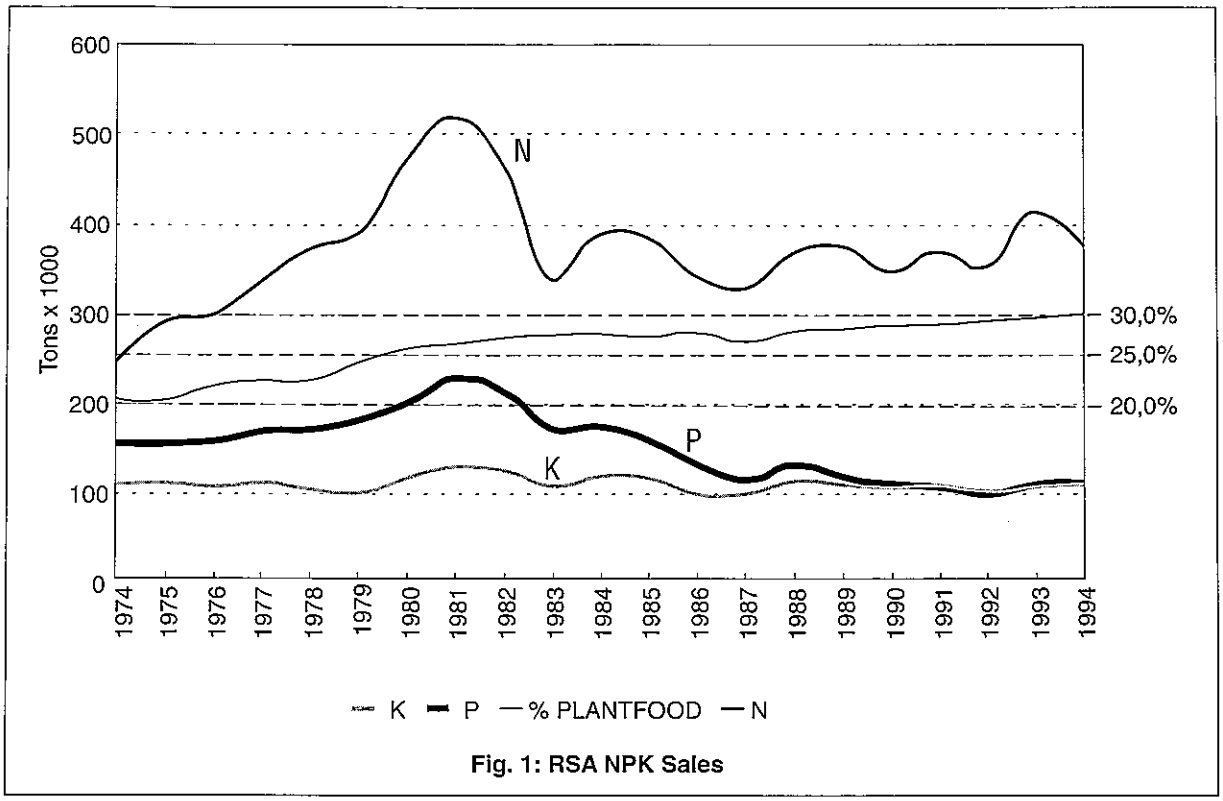

Fig. 1: RSA NPK Sales

3,3 million tonnes in 1981, but subsequently declined to reach a level of more or less 2,0 million tonnes per annum - a level which I believe will be maintained for the foreseeable future.

It must be added that the local industry exported in the order of 210 000 tonnes in 1994 and it is expected that this figure can increase to about 380 000 tonnes in 1995 approaching 50% of the surplus capacity. In addition, it is estimated that the export of phosphoric acid amounts to ± 400 000 tonnes P_2O_5 per annum.

In considering the local industry's competitiveness, it might be of interest to compare our market of ± 2,0 million tonnes per annum, to the sales volume of a major multinational fertilizer company actively involved in Southern Africa. This company produces 13,0 million tonnes of final product per annum, trade in an additional 6 million tonnes of fertilizers and, in addition, produces a further 3 million tonnes of ammonia.

TARIFF PROTECTION

As can be seen from Table 2 protection of the local industry, apart from import control during the war years, has never been excessive. While there is still *de jure* protection on urea today, the sharp increases in international prices of late rendered this tariff non-existent.

However, sanctions during the apartheid era served as powerful protection in itself. Certain countries were not allowed to participate openly on the local market thus ruling them out as competitors.

Notwithstanding the above, the local industry deserves full credit for surviving international competition and still operate profitably today. It must, however, be added that some fertilizer companies derive major portions of their profits from other non-fertilizer enterprises such as explosives, animal feeds, seeds, chemicals, etc.

PRICE MOVEMENTS

International price movements are depicted on Figure 3. What is of interest today, is the recent sharp upward movement of both raw materials as well as final product prices. Although these prices tend to move in the same direction over the long term, there is a tendency of final product to lag price increases of raw materials resulting in a severe margin squeeze. In circumstances such as these, companies which are not integrated backwards to their raw materials, must be under pressure.

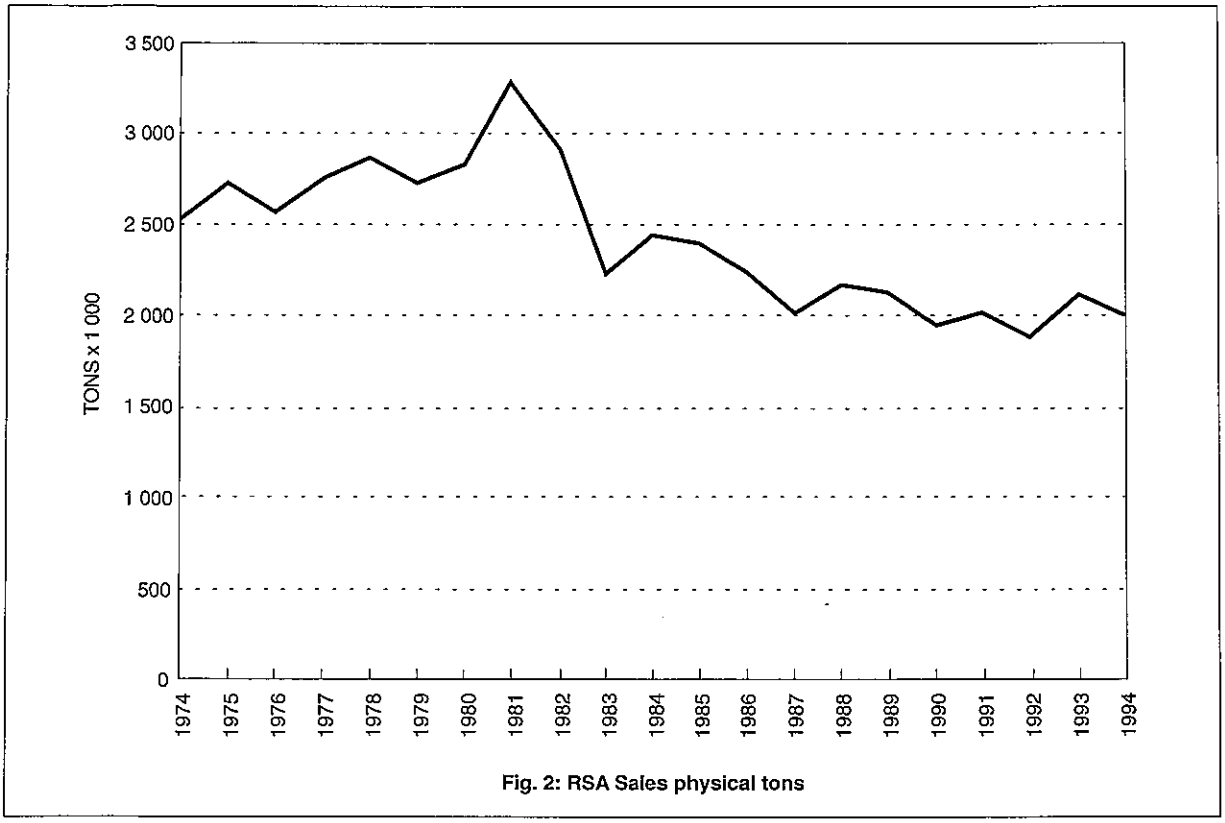

Fig. 2: RSA Sales physical tons

COST STRUCTURE

In assessing the cost structure of the local industry, it can be seen from Figure 4 that raw materials are responsible for 66% of the unit production cost of fertilizers. Operational costs add 29 percentage points to the cost structure. The cost of cross transportation of product not recovered from customers is costing the industry 5% of production cost. The farmer is charged for transport costs ex his/her nearest factory irrespective of the origin of product. The additional cost is borne by the fertilizer company. It is estimated that the cost to the industry, which only favours the transport industry, amounted to R37 million in 1994.

COMPETITIVENESS

In comparing the local industry with its international competitors it is important to identify the industry's competitive advantage, for this is at the heart of a company or industry's performance in competitive markets. Competitive advantage grows fundamentally from the value a company or industry is able to create for its customers. It may, *inter alia*, take the form of a cost advantage for equivalent benefits or differentiation of products and/or services that will satisfy specific customer needs.

With the above as background we can now turn to assessing the local industry in comparison with its international competitors. As a framework the so-called rules of competition which are embodied in five competitive forces can be used:

- the entry of new competitors;
- the threat of substitutes;
- the bargaining power of buyers;
- the bargaining power of suppliers, and
- the rivalry among the existing competitors.

First, the entry of new competitors:

The local fertilizer industry faces, *inter alia*, two possible negative aspects, namely the lack of economies of scale, and low capacity utilisation. It is common knowledge that a fertilizer production facility requires at least ± 500 000 tonnes of annual production to sustain a reasonable return on investment. Scale economies in fertilizer plants are also strongly affected by the number of products produced and the length in production runs. South Africa's bioclimatic diversity dictates the availability of a large variety of fertilizers. Although every effort is being made to

Table 2. Development of tariff protection in the RSA

	Date	Urea	Supers	MAP/DAP	LAN	NPK-compounds	Ammonium sulphate
1. Quantitative import control instituted	1942						
2. Ad Valorem tariff on sulphuric acid (15%), nitric acid (15%), phosphoric acid (15%) and ammonia (25 c/kg less 100%) instituted	1980	15%	15%	15%	15%	15%	15%
3. Ad Valorem tariff imposed							
4. Tariffs on raw materials scrapped (as in 2)	1983						
5. Tariff on sulphate of ammonia cancelled and some tariffs changed to formula duties	1983	30% or 16c/kg less 70%	15%	20% or 19c/kg less 80%	15% or 11,7 c/kg less 85%	30%	free
6. Quantitative import control scrapped	1985						
7. Tariff on LAN, MAP/DAP and NPK-compounds scrapped	1986			free	free	free	free
8. Tariff increase on urea	1986	22,7c/kg less 100%					
9. Tariff increase on urea	1987	27,5c/kg less 100%					
10. Tariff increase on urea		36,5c/kg less 100%					
11. Tariff on super-phosphate scrapped	1991						free

optimise, the nett result in meeting these requirements impact negatively on raw material usage and stock levels.

As has already been indicated, the local market is small not only compared to the rest of the world, but also in relation to its major competitor. If one further considers the production capacity of 2,85 million tonnes per annum in comparison with the 2,0 million tonnes domestic market, the danger signs are up. In many ways the price wars amongst fertilizer producers over the past years, are the manifestation of too many goods chasing too little market - the classical oversupply in a mature market.

Where a value adding activity such as the production of fertilizers, has a substantial fixed cost associated with it, the cost of product will to a large extent be affected by capacity utilisation. High fixed costs bear a penalty for under utilisation, and the ratio of fixed to variable cost inates

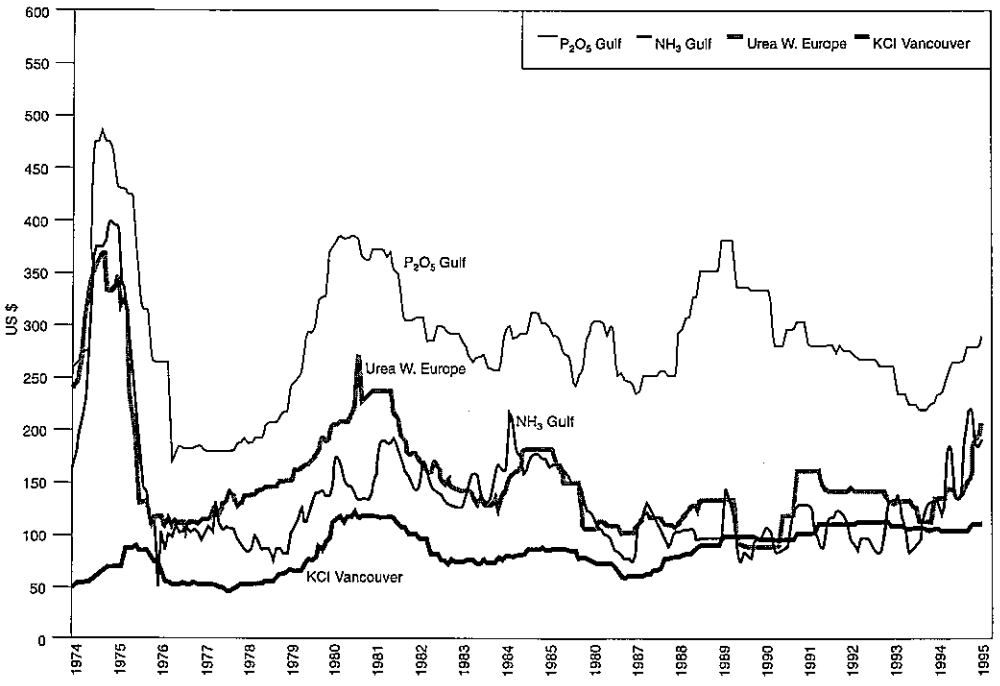

Fig. 3: Historical price trends

Source: Fertilizer International

All prices are shown on a $/tonne basis

activity to utilisation. Therefore to run plants at below their capacities as often happen here, is not sustainable.

With a surplus capacity of more than 800 000 tonnes per year, surplus capacity certainly impacts negatively on profits and reduces the ability of producers to sustain their operations in the long run.

As far as imports are concerned, it is not possible to import substantial volumes at present market prices. Taking into account all the relevant added-on costs including transport, interest rates, storage, etc. the local industry in general sells its product below import parity.

The existing overtraded market, the absence of economies of scale and tendency of prices dropping below import parity prices from time to time, do not add up to a favourable investment climate.

The second rule of competition revolves around the threat of substitutes. Fertilizers produced for the local market must comply with regulations under Act 36 of 1947.

The result is, that the LAN or NPK-compound produced by one company is more or less the same, at least as far as plantfood content is concerned, as those produced by the next company. Fortunately these limitations will largely fall away when the new proposed regulations come into effect.

The threat that might arise in this respect is the fact that the rest of the world in general relies to a much larger degree on bulk blend NPK-compounds while the local farmer prefers the chemical blend compound where it is possible and/or available. International production facilities more recently commissioned, enjoy huge economies of scale in producing the feedstocks for bulk blending such as urea, DAP and KCl. While we produce a wide range of products on plants with capacities of around 500 000 tonnes, internationally plants that produce 1 million tonnes of a single product is fairly common. Competition from these plants is a major threat.

At this point in time I do not foresee that bulk blending will become the norm in the near future. However, should the need arise to switch to bulk blends, the installed capacity of 1,6 million tonnes is sufficient to meet demand taking into account the sales of so-called straights like urea, LAN, KCl and DAP, as well as the portion

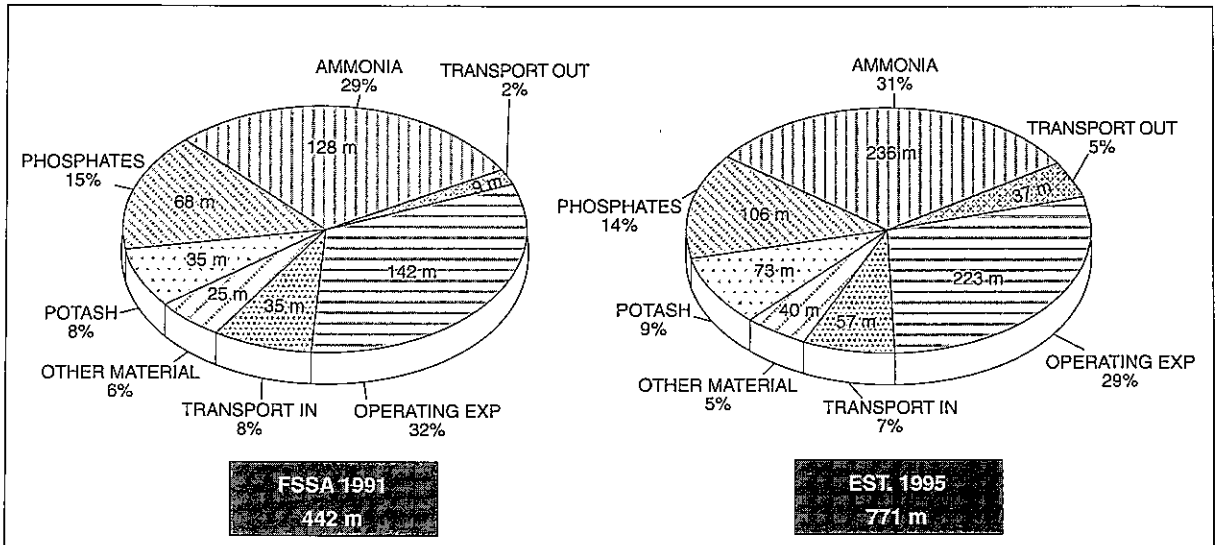

Fig. 4: Cost structure of fertilizer

of the market being serviced by liquid fertilizers and organic materials.

Thirdly, the bargaining power of buyers: The bargaining power of farmers contributed significantly to the price wars that plagued the fertilizer industry over the past number of years. Although the number of farmers buying fertilizers are in the order of anything from 60 000 to 100 000, various ways of exerting buyer power is currently effective. Buying groups and co-operatives acting as buyers for their members are commonplace.

Some farmers have adopted the practise of entering into buying contracts for later delivery with all three suppliers simultaneously. Subsequently, if prices move upward before delivery date, the existing contract will usually be honoured by one or more of the suppliers. On the other hand, should prices fall, earlier buyers expect to be compensated.

It can be argued that this state of affairs cannot be maintained indefinitely and that it is the result of the more than 40% oversupply in the market. Fact is that while local suppliers find ways and means to deal with this problem, it creates a barrier to entry to any proposed importer of substantial volumes who intends entering the market.

The fourth aspect is the bargaining power of suppliers. Taking all the raw material requirements of the producers, with the exception of potash (K) into account, some of the companies are backward integrated by producing their own raw material such as ammonia, sulphur, phosphoric acid, sulphate of ammonium and urea. This has substantial benefits for companies competing with international competitors on the precondition that production of these raw materials is also being done on a competitive basis.

The South African fertilizer market can be regarded predominantly as being a commodity market. In addition, most production facilities employ more or less the same processes and were built or modified by the same companies. Consequently, producers which are not backward integrated have limited bargaining power *vis-a-vis* their raw material supplies.

The fifth and final competitive force namely the rivalry among existing competitors today is as lively as ever. The overhang of surplus capacity, the continuous efforts to improvise and subsequent changing of market shares are testimony of this fact. Competition today is a fact of the world market. If local producers fail to take note of the ability and willingness of those pro-

ducers abroad who are continuously looking for a place to dump their marginal volumes of over-capacity, we will not survive. The international market acts as a powerful watchdog to ensure that prices and quality will be on the same level everywhere.

It must be said that the need to service our farmers in the most cost effective way will require continuous adaptation to meet and maintain international standards. Although the quality of our product compares favourably with anything on offer from abroad, I believe there is no room for complacency, and it would be naive to relax in our effort to stay abreast of new developments. And in this regard I want to add the absolute necessity to perform in line with international standards concerning the environment. Our company, for example, believe that taking care of the environment is an obligation not a choice.

I want to conclude with a short remark on the issue of sustainable competitive advantage. Competitive advantage grows fundamentally out of the value a firm/industry is able to create for its buyers that exceed the firm's/industry's costs of creating it. Traditionally it was believed that there are only two basic types of competitive advantage, namely, cost leadership and differentiation. Today another two aspects have been added namely marketing ability and backward integration. Those participating in the local industry should examine themselves in the extent to which its competitive advantage is sustainable.

In judging our industry as a whole, it is my submission that:

a) the factors contributing to the local industry's ability to compete are:

- own ammonia production at competitive prices;
- Foskor as supplier of rock as well as a facilitator of exports in the form of processed phosphates;
- transport costs from the coast to compete inland;
- established distribution channels (storage, distribution, seasonal offtake);
- appropriate product range;
- ability to supply small batches of chemically blended NPK-compounds that cannot be imported economically;
- farmers in general prefer chemical produced NPK-compound to bulk blended products.

b) The factors that render us less competitive are:

- the under utilisation of capacity;
- the absence of economies of scale compared to international standards;
- the wide range of products manufactured in relative small volumes;
- the fact that the bulk of our raw materials are priced on import parity;
- the marketing of fertilizers locally is probably as good if not better than what is experienced internationally. The over-capacity and the resultant necessity to compete in different ways due to the homogenous nature of our products require special efforts on the service aspects. However, I personally believe that we are not using our scarce resources in research capacity, agronomic and advisory services and laboratory services in the most effective way. There are still too much duplication in these areas. I have doubts whether the manner in which we are doing it is in the best long-term interest of the farmer and is sustainable in the long run;
- the tendency often to sell at prices lower than import parity.

c) The factors that are considered to be threats:

- imports of products by big multinational concerns;
- the inability of officials to enact anti-dumping measures speedily and effectively;
- the ability of farmers to pay for our prod-

uct whilst suffering from drought as well as relatively low prices for their products.

d) The factors that are considered to be opportunities are:

- exports to Africa;
- the development of small scale agriculture and its eventual transformation to commercial agriculture.

CONCLUSION

The nett result of the above to my understanding can possibly be best described by what is termed a competitive advantage of Geographic Scope. Geographic scope may allow an industry to share or coordinate value activities used to serve different geographic areas. Geographic inter-relationships can also enhance competitive advantage if sharing or coordinating value activities, lower cost or enhance differentiation.

While this is true at the present moment we all know that the world is getting "smaller" and the ability to compete over longer distances improves continuously. I do, however, have enough confidence in the management ability of our industry to meet the challenges of the future. You can rest assured that we will deliver product that meet world standards, at world prices or lower, as and when required.