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AN ANALYSIS OF PRODUCTION AND PROMOTIONAL ISSUES IN
THE BEEF, KARAKUL AND GRAIN INDUSTRIES OF NAMIBIA

D Metzger and B Rothkegel

INTRODUCTION

The agricultural sector plays an important role in Namibia's economy. During 1987, 59.1% (Sartorius von Bach et al., 1990) of the population were directly involved in agriculture and therefore contributed significantly to the income of small farmers trading mostly in the informal sector. This sector has contributed 8.4% and 12.5% to the Gross Domestic Product in 1984 and 1988 respectively, i.e. a steady growth is observed. Government expenditure for agriculture, expressed as a percentage of total government spending, has increased from 5.8% in 1980/81 to 8.9% in 1981/82 and thereafter decreased steadily to 3.0% and 2.9% in 1985/86 and 1988/89 respectively. The budget tabled for 1990 allocated 6.93% to agriculture.

Besides agriculture's importance as an employment-generating sector, its contribution to the national economy, and as a source of income to small farmers, this sector carries the responsibility of national food security and also contributes to food security in the Southern African context. The commercial beef-producing sector exported 76,500 tons of beef annually to South Africa during the last three years, whereas Namibia currently imports 50% of its staple food from South Africa. During 1988/89 the country spent R32,074,851 on imports of maize and wheat. The quantity imported every year is directly related to rainfall in the grain-producing areas and the subsequent harvest.

The beef sector contributed 58.97% to the Gross Farm Income during 1988/89. The next biggest enterprises in descending order were: smallstock, pelts, game and milk. These sectors, together with beef, accounted for 91.41% of the total Gross Farm Income during the 1988/89 production year.

Since the introduction of karakul sheep into the country in 1907, the karakul industry has developed into an important export industry generating foreign exchange earnings. The labour-intensive karakul industry opens opportunities for a lot of secondary industries, such as pelt and wool processing. This sheep with its relatively low food intake per unit of production in comparison with mutton sheep or woollen sheep, and its production system, are ideally suited for the ecologically fragile southern semi-desert area.

Production promotion can basically be achieved through productivity increases, expansion of effective demand for agricultural commodities, agricultural linkages and multipliers, or balanced economic growth.

In this paper emphasis will be placed on voluntary or market response production increase by the producer with support from the private and the public sectors. For reasons mentioned above the beef, karakul and grain sectors will be analysed to determine production trends, and some suggestions will be made to increase agricultural production.
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THE BEEF INDUSTRY

Cattle production

The major cattle production areas are the central plateau, the eastern savannah, the northern and north-eastern regions. Beef production is characterized by a dualistic system: sophisticated commercial agriculture and subsistence communal agriculture. Very few products of the communal area are traded at formal markets, therefore very little is known about the products. Commercial agriculture has developed a variety of markets with relatively much information being available to the consumer and the producer.

Furthermore, the country is divided by the so-called cordon fence. The cordon fence, developed for veterinary reasons, separates the northern communal area from the southern commercial and communal areas. Trade of animals and their products from these regions are regulated by organisations such as the office of 'International des Epizootics', WHO and other UN institutions. These veterinary control regulations are a trade barrier for the northern areas, but, on the other hand, a necessity for the commercial areas to maintain and expand trade to the EEC and other parts of the world.

The total cattle population declined from 2.45 million head of cattle in 1980 (Table 1) to 1.9 million in 1985, and to 1.69 million in 1989. The decrease of the population until 1985 was due to drought, while the decrease after 1985 was brought about by agricultural rationalization and environmental awareness of the ranchers. Over the same period total production declined from 423 170 in 1980 to 301 046 in 1985 and increased to 346 378 head of cattle in 1989, despite the fact that ranchers were rebuilding their herds during 1985-1988 after the depletion of the herds due to the drought in the early eighties. It is critical to note that production increased with 15.06% from 1985 until 1989 even though the cattle population decreased with 11.05% over that period, i.e. the net cattle production has increased by 26.11%.

Table 1

<table>
<thead>
<tr>
<th>Year</th>
<th>Cattle popul. (millions)</th>
<th>Population change (%)</th>
<th>Annual carcass production</th>
<th>Production change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980</td>
<td>2.45</td>
<td></td>
<td>423 170</td>
<td></td>
</tr>
<tr>
<td>1985</td>
<td>1.90</td>
<td>-22.45</td>
<td>301 046</td>
<td>-28.86</td>
</tr>
<tr>
<td>1989</td>
<td>1.69</td>
<td>-11.05</td>
<td>346 378</td>
<td>+15.06</td>
</tr>
</tbody>
</table>


Efficiency

Until now, 98.2% of the total production was marketed from the area south of the cordon fence. Oshakati abattoir, north of the cordon fence, slaughtered 5 877 (1.8%) head of cattle during 1988, even though the capacity of the abattoir is much higher. The rest of the annual beef production of the northern area was either consumed directly from own slaughter or accumulated in bigger herds. Bush-slaughtering is gaining in importance since
returns are higher than at the abattoirs. Thus bush-slaughtering is in direct competition with the abattoirs. However, a lack of data restricts the analysis of this enterprise. Referring to Table 2, the ratio of cattle numbers from the area north of the cordon fence to the cattle south of the cordon fence declined from 2.64 in 1985 to 2.26 in 1989, i.e. cattle numbers in the commercial sector declined faster than those in the northern areas. This implies that communal ranchers are reluctant to adjust herd size to feed availability, depending on rainfall. Efficiency in the southern area has increased from 6.42 to 4.96 over the period 1984/89, i.e. producers now need fewer animals to produce one carcass. This ratio can still be improved with improved management skills and new technologies.

Table 2
Cattle numbers in the areas north and south of the cordon fence

<table>
<thead>
<tr>
<th>Year</th>
<th>1985</th>
<th>1989</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle population north of the cordon fence</td>
<td>521 693</td>
<td>518 281</td>
</tr>
<tr>
<td>Cattle population south of the cordon fence</td>
<td>1,376 971</td>
<td>1 169 910</td>
</tr>
<tr>
<td>Total cattle population of Namibia</td>
<td>1 898 664</td>
<td>1 688 191</td>
</tr>
<tr>
<td>Ratio of cattle - north : south</td>
<td>1 : 2.64</td>
<td>1 : 2.26</td>
</tr>
<tr>
<td>Beef production from the southern area</td>
<td>295 627</td>
<td>340 143</td>
</tr>
<tr>
<td>Efficiency ratio</td>
<td>6.42</td>
<td>4.96</td>
</tr>
</tbody>
</table>

Note: The efficiency ratio was determined by dividing the number of cattle south of the cordon fence by the production of that area.

Test results from experiment stations and production results from selected commercial farms indicate that an annual production of 12 kg beef per ha is possible with standard technology and reasonable management. Currently the average of the northern and central commercial region lies at 6.22 kg/ha, i.e. the prime beef-producing area is producing ±50% of its potential.

Prospects and possibilities of production promotion
Economic stability is mainly the responsibility of the authorities, who, through their actions and policies, will determine the economic climate. Low inflation, low positive real interest rates, a functioning market and competitive product prices are the determinants of a growing agricultural sector and investments in agriculture. Trade barriers, marketing restrictions and interference will have a detrimental effect on the productivity of the beef enterprise. Political stability and security are necessary to enhance production.

Total agricultural exports amounted to R404 045 492 during 1989, while beef contributed 67.05% (Metzger, 1990). Therefore, beef is Namibia’s biggest agricultural export commodity and also a significant earner of foreign currency. During 1988 beef contributed 6.94% to the national value of merchandise exports. The international beef market is thus of importance, and one has to look at the basic trends relevant to Namibia. Even though the EEC has been a net exporter of beef since 1980, it is expected that the EEC will become a net importer of beef during 1990 (Meyn, 1989). Eastern Europe will be a strong competitor for this market. Namibia may gain access to the Lomé Convention in the near future and thus will have access to a bigger market if it qualifies for a quota.
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South Africa is a net importer of beef (Otto, 1990), contracting its international demand from Zimbabwe, Botswana and Namibia. During 1988 and 1989, Namibia contributed 11.2% and 13% respectively to the total South African beef supply. The West African countries, net importers of meat, can also be a possible export market.

Namibia must look at all markets in close proximity to be competitive with other international traders. Future prospects for beef in the international markets are uncertain, but opportunities exist for Namibian beef, especially in Africa. The South African market is a cash market whereas other markets will be characterized by barter trade. Terms of trade will have to be negotiated.

Price is a market signal for the producer and the basis of production. For this reason the South African market is of utmost importance to Namibia as it operates as a free competitive market. Beef is sold to or in South Africa either by English (live animals) or Dutch (carcasses) auction. Both pricing systems ensure a competitive price. SWAMEAT, the Namibian abattoir, on the other hand, uses a formula pricing system, which uses the South African auction price as parity. If the trade to South Africa is stopped, the Namibian producer will face a monopolistic meat industry with SWAMEAT as the sole buyer and processor of meat. Deregulation and a responsible government will ensure an effective pricing system, increase competition and ensure productivity.

Agricultural input prices have risen by 65.47% (Metzger, 1990) since the first quarter of 1987 until the second quarter of 1990. Over the same period beef prices have risen by 34.47%. Should this tendency continue, agricultural profitability will come under severe pressure and this economic sector will stagnate. Reducing inflation is a task that many have pursued without success. Most of the Namibian inflation is imported from South Africa, resulting from the sanctions against South Africa (fuel), the policy of protection (diesel engines) and a deteriorating Rand exchange rate. Agricultural inflation can thus be contained by shopping for agricultural inputs in other countries with stable economies. The benefits can, however, only accrue to Namibia if our own foreign exchange rate is stable.

Research and development, education and extension by the government for the commercial sector will be reduced drastically in the future. The Namibian beef producer is in a position to help himself. The role of consultants and private educational institutions will gain momentum, determining the efficiency level of commercial agriculture in the future.

Finally, production can also be promoted by bringing unutilized land into production. Introducing a land tax, in place of a progressive income tax, will have a couple of effects: first, unproductive and unused land will have to come into production, secondly, the government will be assured of a fixed income, and tax income will not be lost due to tax evasion. However, one has to guard against a production-inhibiting tax rate.

The commercial cattle industry is thus a driving force in Namibia's agricultural economy. Productivity can be increased by extension, consulting and market deregulation. An effective demand for beef is available internally as well as externally. Balanced economic growth with its multiplier effects, more equal income distribution and the current population growth will result in an increased internal demand. Deregulation and a free market are thus essential to ensure a healthy and productive beef industry.

Using the efficiency ratios of the respective years, one can project the production potential of the northern area, which includes the Kaokoveld, Ovambo, Kavango and Caprivi. With the efficiency ratio of 1985, and the cattle population north of the cordon fence during 1989, one can expect an annual marketable production of 80,729 head of cattle. Based on the
more favourable ratio of 1989 the production can rise to 104 492 head. Total production would thus increase by 23.31% or 30.17% respectively. This only holds true if the ranchers in the area north of the cordon fence attain the same level of efficiency as those in the commercial sector.

Until now, livestock holders in the communal areas have grouped themselves around watering points and along rivers. The result is that areas around watering points are over-exploited while vast stretches of land are unutilized. This situation has to be relieved by developing unutilized land, transferring excess livestock to these areas while controlling numbers in the old areas. The people involved in such a resettlement scheme will have to indicate that they are ready and willing to accept a more structured approach to livestock farming. To implement this scheme, these farmers will require support in terms of extension, training, farm planning as well as as the necessary financial support for capital items. Loan financing must be made available for infrastructure, movable assets and production credit. The success of such a resettlement scheme depends on the land tenure regulations.

The biggest challenge will be to change the perception of the traditional chiefs who regard cattle as a store of wealth. This attitude is rational, but prevents a cash economy with its multipliers, i.e. economic growth is restricted. To reverse this situation, the tribal chiefs have to acknowledge money as being wealth, regard cattle as a means to attain wealth and receive a return on the accumulated wealth, i.e. interest on the accumulated money. This implies the development of a rural financial market. According to Coetzee (1988) the savings propensity is rather high in these areas.

A long-term migration trend has been observed from rural areas to jobs in local towns and cities (Hay et al., 1989), mainly due to low agricultural incomes. Declining male support has left many households short of labour to the point that productivity is restrained. This trend will have to be reversed to prevent serious household food insecurity. The expansion of technical support for smallholder farmers has to be directed at maximizing income effect to revitalize the agricultural sector in the communal areas. An assessment of the inter-sectoral linkages and multipliers in the agricultural sector is difficult because of a lack of data. Therefore, research must be directed at giving it empirical substance.

Developing a market (Botes & Metzger, 1990) is vital to increase productivity. This will necessitate the development of an infrastructure to utilize the available abattoirs as well as the development of the bush butchering sites. Surplus beef can be processed at Oshakati abattoir and sold over the cordon fence in a frozen, canned or dried form. Angola can be an additional market for canned meat, if the terms of trade can be negotiated.

A framework for rural development as well as support to emerging farmers in Namibia, including a concept for a Farmer Support Programme and a Farmer Settlement Programme, will have to be established. This represents an important shift in approach from capital and technology-intensive agricultural projects to a strategic approach which can be regarded as being much more effective in respect of development needs of rural communities.

THE KARAKUL INDUSTRY

Karakul production in the communal and commercial farming areas

The area in Namibia suited for karakul ranching is mainly a savannah type veld with carrying capacities varying from 20 kg to 4 kg biomass per hectare per annum (two to eight
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hectare per sheep per annum). This region with an annual precipitation of 100 to 200 mm stretches from the north-west to the south and south-east. It is ecologically fragile and therefore exposed to the dangers of desertification. The karakul sheep, a multipurpose fat-tailed species, is adapted to the prevailing arid conditions and thus makes the karakul industry the most important industry of the arid regions.

The area suitable for karakul farming includes Namaland, Damaraland, certain parts of Hereroland, Rehoboth, being so-called communal areas, and a commercial area which is twice the size of the communal areas. A stock census of December 1989 indicates that the smallstock population in these areas included 153 757 karakul sheep, 10 378 dorper sheep and 409 706 boer goats.

Presently, 1 200 commercial farms produce approximately 633 500 karakul pelts, while communal farmers produce an estimated 16 500 pelts. Karakul losses to predators are high in the communal areas, because these sheep do not develop the habit to return to the pens at night and therefore communal farmers favour goats which develop this habit. A severe karakul population decrease on the commercial farms was experienced over the last decade (Table 3) due to the declining pelt price which was brought about by low demand through the anti-pelt campaign, warm European winters and an overproduction of substitute pelts (mink) in general. Rationality forced managers to substitute the pelt sheep with mutton sheep.

<table>
<thead>
<tr>
<th>Table 3</th>
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<tbody>
<tr>
<td>Karakul pelt production</td>
</tr>
<tr>
<td>Year</td>
</tr>
<tr>
<td>1975</td>
</tr>
<tr>
<td>1979</td>
</tr>
<tr>
<td>1980</td>
</tr>
<tr>
<td>1985</td>
</tr>
<tr>
<td>1990*</td>
</tr>
</tbody>
</table>

* Estimated.

During 1970 karakul sheep represented 90 percent of the smallstock herd in Namibia, during 1989 it dropped to 28%.

Efficiency of the karakul industry

For years, the commercial smallstock farmer kept adjusting his production in such a way that most farmers currently have a diversified smallstock herd, i.e. they produce a combination of pelt, mutton and wool. Changing the production mix enabled commercial farmers to survive the adverse economic conditions. According to the Karakul Board the break-even price of karakul pelts is R35 per pelt. The latest auction price of R28.69 per pelt is well below the break-even price. However, indications are present that the auction price will gradually increase at the coming auctions.

Overgrazing, due to the increase of the goat and mutton sheep population, caused alarming environmental damage. Some of the most underdeveloped areas and underprivileged societies are found here. Of the 235 000 people in these areas 95% are
Metzger & Rothkegel

totally dependant on agriculture for their livelihood, be it from the proceeds of stock sales or by selling their labour to farms in adjacent commercial farming areas. Social and economic upliftment, and environmental recovery is only possible in the long run if:
- the total smallstock population is reduced, and
- environmentally damaging smallstock breeds, such as goats, can be replaced by karakul sheep.

Profitability and prospects for karakul promotion

To prevent financial ruin, commercial farmers will have to evaluate alternatives if the current price prevails. Communal farmers are not in such a desperate situation because their living standards are lower, and they have fewer financial commitments. However, this situation inhibits socio-economic development in those areas.

Even though profitability is low, karakul pelt production should be encouraged. The karakul sheep is well-adapted to arid areas and thus reduces production risks, its biomass is lower than that of its competitors and therefore reduces grazing pressure. Additional advantages will accrue: The karakul breed is a multipurpose sheep from which both wool and mutton is derived. Increased wool production can spur the development of secondary industries such as rug- and carpet-weaving, which leads to additional employment and an increase in real income. Lambs, of which the pelt quality is unsuitable for garment production, can be raised for mutton at a price that can compete with that of goats.

A prerequisite to revitalizing international demand is a marketing campaign that neutralizes the effects of the anti-pelt/fur movement and informs the producer of the production systems. As pelt coats are a luxury item, marketing should take economic conditions of consumer countries into consideration and advertise for a target market. The introduction of synthetic fibre can improve demand for pelts as it is increasingly difficult to distinguish between synthetic and real pelts. Protest groups would therefore lose an important visible target to demonstrate against. At the same time however, synthetic pelts are a competitor and therefore the demand for karakul depends on the demand elasticity of karakul pelts.

The continuous weakening of the rand against the British pound, sterling and the German mark will improve the prospects for karakul farmers once the price shows an upward tendency.

AGRONOMY

Production and efficiency

Production in the arable sector is dualistic. The peasant farming sector mainly produces for subsistence with occasional surpluses after above-average rainfall years. Once the tribal chief has allocated a patch of arable land to the peasant, he will retain the right of use thereof. Cultivation of the land is labour-intensive and the burden falls mainly on women. Traditionally, millet (Pennisetum americanum) or mahango and sorghum are planted in the western peasant regions, while maize production is more common in Kavango and especially in Eastern Caprivi. One of the factors impeding maize production in the north-western regions is low rainfall. Mahango is well-adapted to harsh ecological conditions in that it is drought-resistant and produces a low but stable yield on infertile sandy soils. It is estimated that 200 000 - 240 000 hectare of land are cultivated in the peasant farming sector. The yield
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for the peasant household varies between 0.2 ton and 0.5 ton per hectare with an estimated mean production of 0.29 ton of coarse grain per hectare per annum.

The commercial sector, on the other hand, produces about 25 percent of the national annual consumption of staple grain, approximately 175 000 tons, on 17 000 ha privately owned land, making use of specialized and highly sophisticated techniques. Depending on the rainfall, the average yield for maize under dryland conditions lies between 1.75 and 2.7 tons per hectare, while maize yields under irrigation average 7 tons per hectare. Other grains which are produced by the commercial farming community on a much smaller scale are wheat and yellow maize. The latter is almost exclusively used as animal feed.

A recent study by the division of Agricultural Economics and Marketing (Rothkegel, 1989) indicated that Namibia is about 50 percent self-supporting regarding staple grains. For the season 1988/89, the non-commercial and commercial farming sectors contributed 51.8 and 11 percent respectively to the total national staple grain consumption. This production season reflects one of the weakest performances for the commercial sector.

Prospects and possibilities for agronomic promotion

Having reached a highly specialized level of technology and know-how, it seems that the commercial farmer turns to other non-food or export crops. Such a development is in conflict with the national aim of food security, but it can lead to foreign exchange earnings and job creation, provided that the farmer does not fully switch over to non-labour intensive farming practices.

A few options and possibilities can be explored in accordance with the national policy aimed at maximising national food security. Any development regarding the non-commercial farmer should be based on the people and centre around existing traditional farm practices. Farm service centres, as proposed by the Ministry of Agriculture, Fisheries, Water and Rural Development, will have to be developed to upgrade peasant farming and to provide extension, training, financial support and other small farmer support programmes.

Extension services for crop production should aim at males and females, because women are the driving force behind subsistence agriculture and are currently the labourers and managers of agricultural activity. Male involvement has to be encouraged to reduce the agricultural labour shortage in the communal areas.

Non-formal training of farmers on crop production should include short courses for adult education. Practical experience can be gained by the introduction of an on-farm training scheme where entrepreneurs work on an approved commercial farm with the aim to learn about all the aspects of plant production. Formal training at Ogongo and Mashare should aim at providing the basis for agricultural officers, technicians, entrepreneurs and managers to be used in extension and management.

An appropriate credit scheme for the emergent farmer, along with a properly organized market system and infrastructure, will have a significant impact on the productivity of this sector (Botes et al., 1990). Direct exposure to favourable marketing and financing opportunities is essential to uplift the rural Namibian community.

Since a lot of agricultural research has been performed with regard to rural development, there is no need to re-invent the wheel. Research for emergent farmers should be peasant-centred. Research should be directed at mahango cultivar improvement, methods to reduce bird damage and improve the shelf-life of mahango flour.

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Finally, developing uninhabited areas will contribute to the supply of grains, i.e. the area under production can be increased. However, the absence of water for human consumption in certain parts of Ovambo might impede new settlements for smallholders.

CONCLUSION

The discussed commodities are of importance to Namibia for various reasons: Beef is a major export commodity and thus an earner of foreign currency, karakul pelts are also an earner of foreign currency and it is clear that the karakul sheep, through its production system, is ideally suited for the semi-desert regions of the west and south of the country. Wheat and maize represent the biggest agricultural import commodities and since they play an important role in the food security of this country, production should be encouraged.

The dualistic agricultural sector calls for a structured approach to development with policies directed at each of the sectors until such time that the currently so-called communal farmers can compete with the so-called commercial producer. The importance of agricultural growth, economic growth and employment is clear. If an increase in employment of lower income people does not accompany increased agricultural output, there will be inadequate demand for food and real agricultural prices will decline sufficiently to discourage continued growth in agricultural production and the associated inter-sectoral linkages and multipliers.

With reference to the four criteria of production promotion it can be stated that Namibia has plenty of room for productivity increases, both in the commercial sector and in the communal sector. Resource productivity and management efficiency will have to be enhanced. With increased employment, real income growth and population growth, an increase in effective demand can be expected.

An assessment of the intersectoral linkages and multipliers in the agricultural sector in South Africa indicates that agriculture plays an important role in the economy with the various economic sectors being influenced differently by changes in agricultural production (Van Rooyen, 1990). Unless research proves otherwise, it can be accepted that this holds true for Namibia as well.

Finally, it can be argued that investment in developing agriculture will upgrade farming productivity and generate multiplier effects, creating demand and corresponding entrepreneurial actions, employment and income in poor developing areas. Economic upliftment and growth could be expected in these areas. This will, under certain conditions, result in a more balanced economy and will, within ecological parameters and if human capital factors are attended to, provide a sound basis for sustainable growth.

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An analysis of production issues in the beef, karakul and grain industries of Namibia


