

THE POTENTIAL FOR EXPORT DIVERSIFICATION IN BOTSWANA

OSTRICH PRODUCTS CASE STUDY Discussion Draft¹

**The ComMark Trust
BIDPA**

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BOTSWANA INSTITUTE FOR DEVELOPMENT
POLICY ANALYSIS (BIDPA)

1. INTRODUCTION

The commercial exploitation of ostriches began first in southern Africa towards the end of the nineteenth century when ostrich plumes became a principal South African export behind gold and diamonds. Feathers are no longer a fashion item but, to this day, ostrich products from southern Africa remain dominant in the world market. Significant demand for ostrich meat is relatively recent and on a generally rising trend; the longer-established demand for ostrich leather is generally stable.

However within southern Africa, Botswana – home of the world’s largest wild ostrich population – has lagged well behind South Africa, Namibia and Zimbabwe in developing the commercial potential of ostriches. This is largely because of the technical and capital demands are significantly greater than for cattle and other livestock production. Only domestically-reared ostriches are slaughtered and this means that ostriches are generally hatched on farms with incubation facilities and, to ensure survival, reared for three months before moving on to well-fenced farms. They are usually slaughtered once they reach a weight of 95 kg (typically at 10 months) in specially constructed abattoirs. Most industry estimates are that the economically- viable farming of ostriches (i.e. the 3 to 10 month period) requires at least 50 birds, in turn requiring 100ha.

For Botswana, therefore, the successful development of ostrich products needs a well-developed supply chain, from breeding to processing, which is both internationally competitive and also offer better returns than existing forms of livestock production. In this context, the analysis that follows will assess the commercial potential of the nascent Botswana ostrich industry. The first part of the report will present and discuss international ostrich product market trends while the second part will locate the Botswana industry within a regional context. The final part of the report will focus of the current structure and performance of the Botswana ostrich industry in order to conclude on its long term viability.

2. THE GLOBAL CONTEXT ²

2.1. The Ostrich Industry

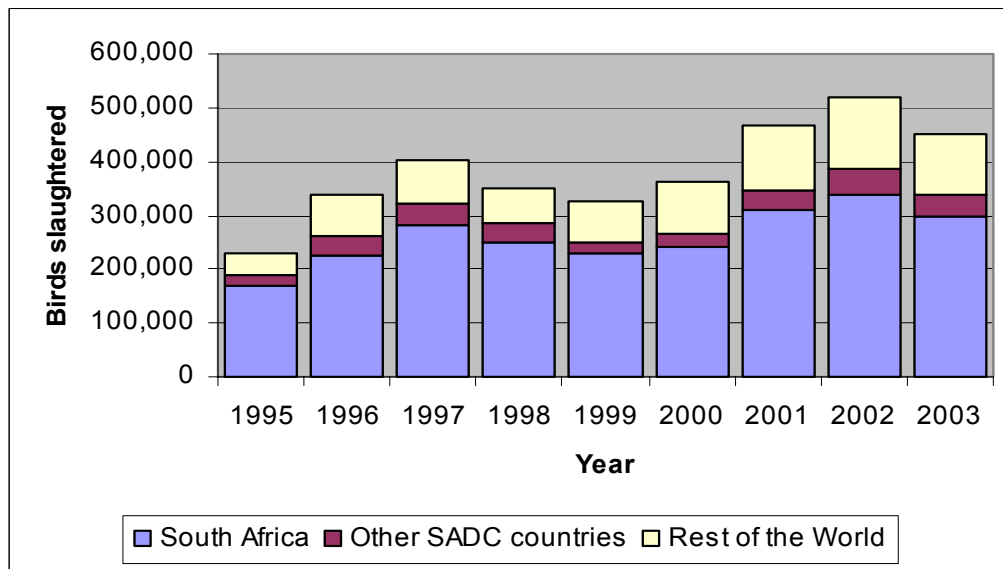
There were estimated to be just under 500,000 commercially-bred ostriches in the world in 2003, with around 350,000 of these in South Africa. Briefly, in the mid-1990s, the US challenged this market dominance with 250,000 birds in an estimated global total of 750,000. However, subsequent business failures have substantially diminished US participation in the industry and in 2003 there were only 16,000 birds being farmed in the US.

² This section primarily draws on the following sources namely Cornelius (2004) and Makube (2004).

In 2004, an outbreak of avian influenza led to around 25,000 ostriches being destroyed in the Eastern Cape province, but South Africa still holds around 63% of the global flock followed by Australia at 8%, Israel and China at 5% each. Namibia and Zimbabwe have between 2% and 2.5%, with Botswana a minor producer at below 0.2%.

The trend in the slaughter of ostriches is shown in the Figure 1.

Figure 1: World ostrich slaughter



Source: Ostrich Industry Outlook

The decline in birds slaughtered in 2003 is largely due to a decline in demand for ostrich meat in the EU (following a switch back towards beef after a return to consumer confidence in bovine products), and for leather in the important, but currently depressed, Japanese market. Another factor has been a sharp appreciation in the Rand that has diminished the price competitiveness of ostrich products from South Africa, the major supplier³.

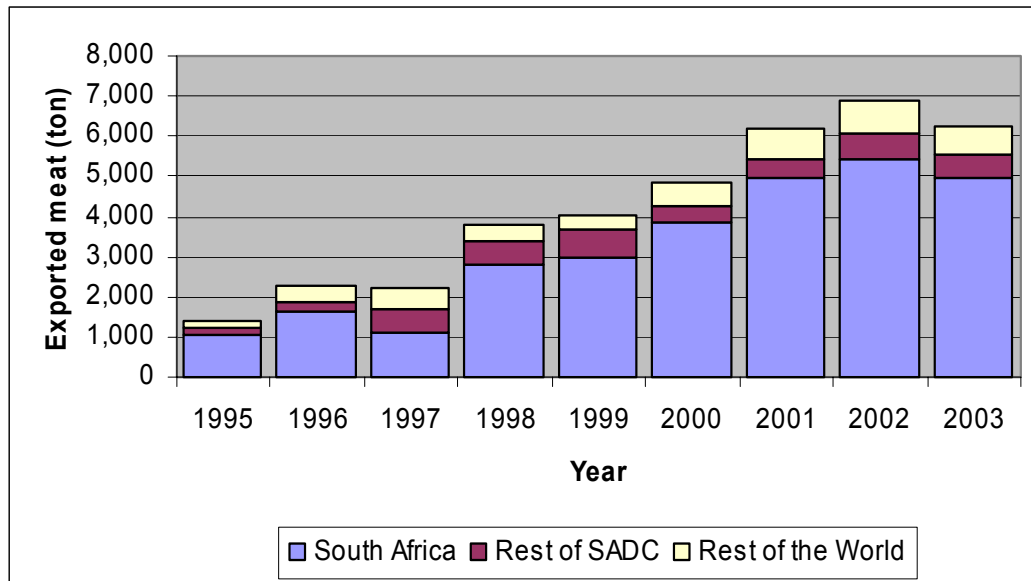
2.2. Ostrich Meat

The main ostrich meat exporting countries are South Africa, with 78% of the current market, followed by Israel, Namibia, Australia and Zimbabwe. Figure 2 shows world ostrich meat export trends.

³ During 2003, the South African Rand appreciated more than 25% vis-à-vis the United States Dollar.

The main region of market growth has been the EU where relatively health-conscious consumers have been attracted to the low fat and low cholesterol content of ostrich fillet and ostrich steak, which are substantially below both other poultry products, pork and beef. In Asia, there are also growing demand in countries such as Hong Kong, Singapore and Malaysia.

Figure 2: World ostrich meat export trend



Source: Ostrich Industry Outlook

South African producer prices for ostrich meat provide an international price trend, because of its market dominance (see Figure 3). The emphasis is on the trend and not the level as this represents producer returns.

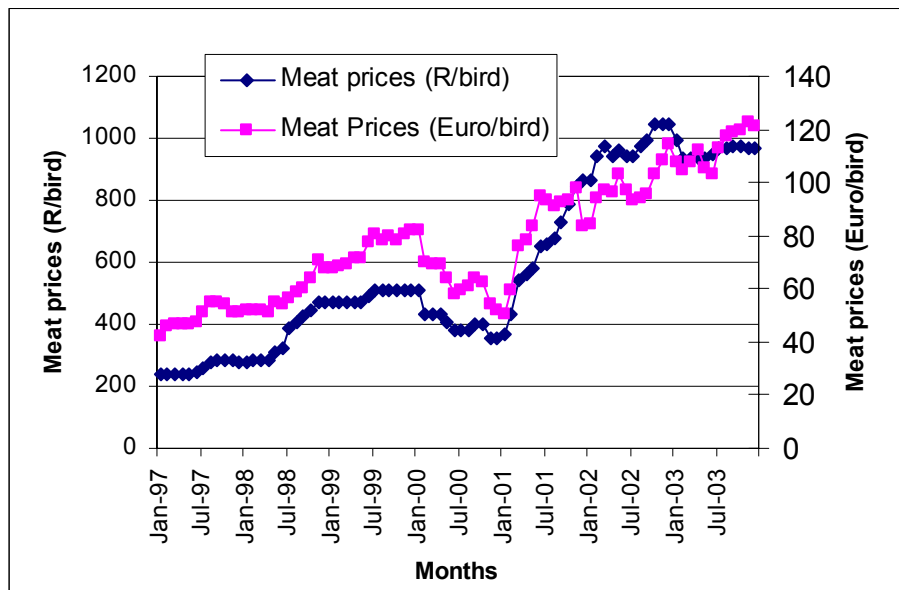
The sharp increase in the price for ostrich meat from early 2001 was closely related to the BSE and FMD outbreaks in the European livestock industry. The high demand for 'healthy' alternatives continued until early in 2002. As European consumers turned back to beef and lamb, the high demand for ostrich meat decreased and the price started to drop again from early 2002.

The price has stayed fairly constant, although susceptible to supply changes. For example, the outbreak of avian influenza in South Africa saw an increase in price from €6.50 per kg in the beginning of 2004 to between €7.20 and € 7.50 per kg the following October. This price increase was brought about by a shortage of ostrich meat in the international market as a result of a European Union import ban on South African ostrich meat, eggs and live bird exports. This ban came into effect on the 10th of August 2004 and is in place until 31 of March 2005. In

the short term, ostrich meat prices are thus expected to remain comparatively high.

It is important to note that the realised export price per kilogramme pertains only to a relatively small portion of the carcass. Typically an ostrich is slaughtered at 95kg weight which translates into 47.5kg cold dressed meat weight. Of this total, only 22kg are exportable cuts (steaks and fillets). At a market price of €7.50 per kg this translates into a return of €165 per bird.

Figure 3: Ostrich meat price trends (South Africa)



Data from Agrimark Trends, 2004

2.3. Ostrich leather

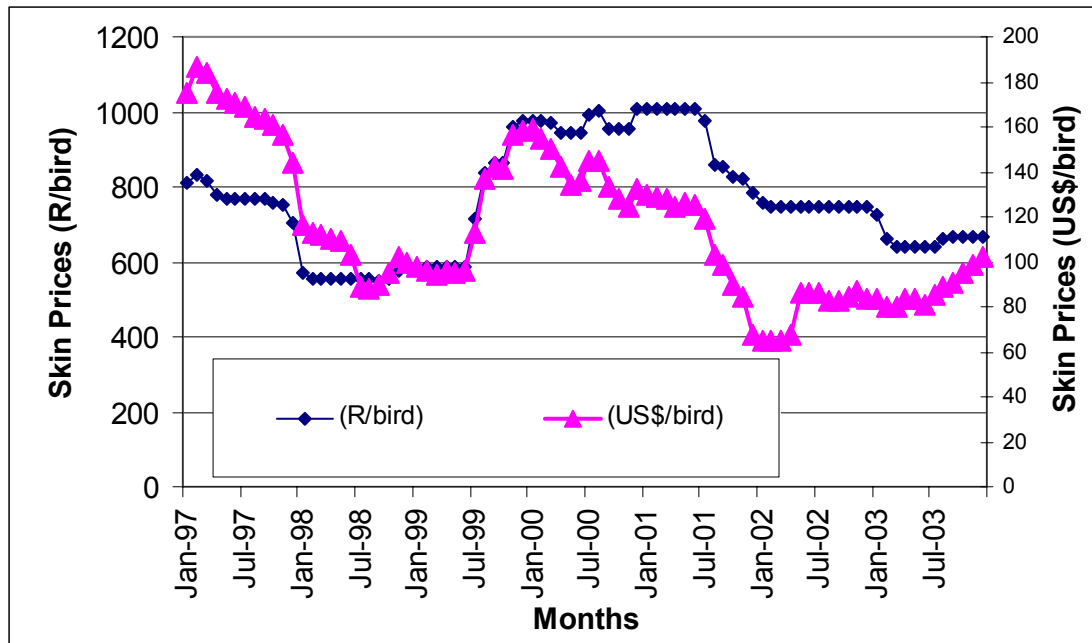
Ostrich leather is regarded as an exotic leather product alongside crocodile, snake, lizard, camel etc. Ostrich skins are the largest in terms of volumes traded in the global exotic skins market.

Countries that produce ostrich skins, but do not have the economies of scale, or quality and expertise in their manufacturing facilities, export ostrich skins at the raw and crust stages. South Africa is an important processor of finished skins for the main leather manufacturers in Japan. The main uses are in designer items such as handbags, belts, cowboy boots, dress shoes, and luggage. However there is also demand in upholstery in both furniture and car seating.

The price of ostrich skins reflects supply factors rather more than demand. The over production in 1997 led to a decrease in skin price and it took the reduction in

slaughtering in subsequent years to stabilise the market (see Figure 4). However the increase in demand for ostrich meat in Europe from 2001 once again led to over-supply of skins and a subsequent drop in prices. There have also been some demand side effects as the Japanese market has contracted with economic recession in the country.

Figure 4: Ostrich skin price trend (South Africa)



Data from Agrimark Trends, 2004

The international prices for skins in October 2004 was US\$16 per square foot for a grade one skin (a skin is approximately 15 square foot per bird); US\$14 per square foot for a grade two skin; US\$12 per square foot for a grade three skin and US\$11 per square foot for a grade four skin. Most skins are grade two or grade three.

2.4 Summary

The global demand for ostrich products has generally risen over the past decade, largely due to the growing acceptability of ostrich meat. Demand for ostrich leather is susceptible to disposable income growth in a few markets but remains generally stable. Possibly in anticipation of higher returns than could be realised from a technically demanding product, the supply of ostrich products in new production areas rose sharply in the mid-1990s, and the market was characterised by over-supply and price falls. There is now a better balance between supply and demand and, with longer-established southern African producers still a dominant factor in the global market, there are reasonably good

prospects for new entrants – such as Botswana - to the industry, especially if sharp production falls in neighbouring producer countries (notably Zimbabwe) continue, and the production levels in the major producer country (South Africa) continue a gradual downward trend.

3. THE REGIONAL CONTEXT

3.1 Overview

Understanding the regional context for assessing the potential for Botswana's ostrich products is important for two reasons.

First, Botswana is developing its industry not only well behind South Africa, but also behind Namibia and Zimbabwe. All three countries are competitors with, currently at least, higher levels of capital investment and more established vertical integration into processing and thus higher value addition.

Second, Botswana is heavily dependent upon suppliers, agents and processors in other countries in almost all areas of production and processing. This dependence does not necessarily diminish Botswana's competitive position in ostrich production, but it does present risks to producers and also weakens the industry's bargaining position where both its production requirements and output levels remain small relative to production elsewhere.

3.2 Comparisons

In South Africa, there have been significant changes since the single channel cooperative marketing system abolished in 1993 (SAOBC, 2004). Up to that time, entry into the ostrich industry was highly regulated and controlled by one organisation, the Klein Karoo Cooperative (KKC) in Oudtshoorn.

The KKC abattoirs and tanneries retain a strong position in the global ostrich products market (with 50 per cent of global production). However, South Africa's 558 export registered ostrich farmers, producing around 300 000 slaughter birds per year, now have a choice of fifteen tanneries and access to ten EU export approved abattoirs.

The effect of deregulation⁴ has also led to an increased spread of production across South Africa with increased supply affecting skin prices especially (with some industry sources complaining that competition has led to more aggressive buyer behaviour).

⁴ For a detailed analysis of the effects of deregulation on the South African ostrich industry see NAMC (2003). This document can be downloaded for www.namc.org.za

The ostrich industry in South Africa remains well organised and self-financed: an umbrella organisation, the South African Ostrich Business Chamber, links three industry groups: the organisations (SAOBC, 2004): the National Ostrich Processors of South Africa; the South African Ostrich Producers Organisation; and the South African Ostrich Breeders Association.

In Zimbabwe, commercial ostrich production grew in the 1990s but there has been a sharp decline in production since the land redistribution was accelerated in 2000 with investment confidence damaged for those producers that retained their farms. There are two EU certified abattoirs and three tanneries in the country, although their commercial viability is now in question. Both abattoirs are dependent on a very small number of producers, probably less than ten in 2004 down from around 60 in 2002.

In Namibia, production is more stable, although it has dipped in recent years. Ostriches were initially brought from South Africa for game purposes, but by 1995 Namibia exported close to 30,000 ostrich eggs and over 10,000 live birds. An integrated ostrich processing company, the Ostrich Production Namibia (now Karas Abattoir and Tannery) was subsequently formed with its own a hatchery, abattoir and tannery. It must be noted that while this abattoir had the capacity to slaughter 90,000 ostriches per year, for the 2003 season they slaughtered only 22,400 birds and the 2004 figures are thought to be significantly below this. These low slaughtering numbers are attributed to two successive years of drought which saw commercial farmers withdraw from the industry and consequently this abattoir was converted into a multi-species unit in 2004.

Despite these negative developments, the Government of Namibia has remained committed to the industry. In 2003 it declared ostriches a strategic industry and has provided subsidies to assist producers, especially with respect to the relatively high capital costs for production infrastructure. EU certification has been achieved and Namibian meat products are now marketed in Europe and Japan.

Set against this regional record, the Botswana industry remains at the infant stage. The number of registered ostrich producers (43 in 2004, with 35 said to be active) is at least on a level with Namibia and Zimbabwe, but there is only one abattoir, operated by the Botswana Ostrich Company (BOC), which did not receive EU certification until August 2004; and there is no tannery as yet.

3.3 Linkages and Dependence

There are plans to establish a research station and breeding farm in Botswana, but at present breeding birds have to be imported. (It is possible to acquire a

license to capture wild ostriches for breeding purposes, but capturing has proved difficult and expensive in the past). The import of South African birds into Botswana is limited due to the vaccination practises followed by the South African industry (i.e. against Newcastle disease) - Botswana has chosen a non vaccination policy.

Zimbabwe is currently the only source of breeding birds but doubts over continued supply have encouraged the consideration of Namibia as an alternative source. To date the Botswana industry has successfully imported a limited number of breeding birds from this country. The cost of imported birds is increased by the stringent quarantine conditions furthermore in the case of Namibia, high transport costs due to distance are a contributing factor.

Ostrich feed is less of a problem for producers in Botswana as there is a local company producing and delivering feed: Master Farmer Feed. There are also distributors of South African feed companies, the price they charge tend to be higher than Master Farmer Feed and there is an unwillingness to deliver in the smaller quantities often required (minimum load size - 32 tons of feed).

Ostrich production also uses veterinary treatments, (average of P14.00 per bird). These are imported from South Africa, although the price is subsidised at Government livestock clinics. Supplies are not always available however and the costs of procurement from private companies such as Agrivet are relatively high.

Meat exports are currently undertaken through a Johannesburg-based branch of a global ostrich trading company, Southern Impact, which also has interests in Zimbabwe. Supply from the BOC is still too low to contemplate a diversification of marketing channels. The main reason for the low supply is due to the fact that the Botswana industry did not have an export market for ostrich meat as the abattoir was not European Union accredited. This accreditation was only finalised in August 2004.

Similarly, the volume of skins produced does not yet provide a strong basis for competitive selling, although the BOC has found alternative buyers in South Africa to South Africa's largest processor, Klein Karoo Cooperative, which no longer enjoys a monopoly in ostrich leather production.

Taken together, these various input supply and processing characteristics of the small Botswana ostrich industry indicate a degree of external dependence that has served to diminish confidence, and thus investment, to date. However, none of the characteristics are serious constraints to the eventual growth of the industry, and an increase in the volume of production is likely to elicit a positive response from local input suppliers and market agents.

3.4 Leather Industry Potential

It is worth briefly considering leather production as clearly the long-term economic benefits of an ostrich industry, in terms of employment and foreign exchange earnings, are linked to possible beneficiation.

The ostrich leather value chain is shorter than the bovine leather chain as it does not include a separate semi- processing stage: thus raw skins are processed into finished leather at one factory.

South Africa is at the centre of the ostrich leather industry. From the ostrich abattoirs of the region, it receives around 200,000 skins a year; from elsewhere in the world it receives around 15,000 skins. South African tanneries export around 90% of its finished leather to manufacturers (in Europe and East Asia especially) where it is made into gloves, hand bags, shoes, travel goods, wallets etc – often with designer labels.

The remaining 10% goes to South African manufacturers of the same range of items. Of these, some 75% are exported and 25% go to the domestic market, particularly its tourists. However, one potential growth area for the manufacture of finished leather within the region is the automotive upholstery industry, which could substantially alter the direction of finished leather to domestic markets.

For Botswana, possible participation in leather production and manufacturing is a distant possibility, but it needs to be noted in any long-term strategy for the industry.

4. THE REGULATORY ENVIRONMENT FOR OSTRICH PRODUCTION

4.1 EU Standards and the Costs of Compliance

Botswana's ostrich industry was developed with the principal objective of targeting the EU export market. Thus the ostrich abattoir was designed to conform to EU's equipment and fabric standards; and abattoir slaughter and public health practices have been designed to satisfy EU sanitary and phyto-sanitary (SPS) standards.

In 2001 the European Commission's Health and Consumer Protection Directorate conducted a mission to Botswana on 'Live Ratites and Farmed Feathered Game Meat' which found the overall position on animal health 'satisfactory' but requested a number of assurances and it was a further three years before the abattoir was finally cleared.

In order to ensure that EU standards are adhered to, government veterinary officers and meat inspectors have been deployed to work full-time at the abattoir. Most have previous experience with beef export compliance to the EU.

BOC recognise that compliance with EU hygiene standards is costly, but cannot currently isolate and quantify such costs. However, one of the concerns is that the multi-species abattoir is required by government to meet stringent EU standards for all its slaughter operations, including cattle service slaughters for domestic beef processors. This renders the abattoir less competitive in slaughter service provision, relative to its domestic rivals. For example, the BOC service-slaughter charge on cattle stands at P100 per head, whereas city council abattoirs charge only P30 per head for the same service.

The abattoir, which began operation in March of 2002, was approved for export to the EU market only in August of 2004. Since being granted such approval, the abattoir has been able to export small quantities to Belgium: other EU market destinations have not been targeted due to insufficient volumes to supply other markets.

4.2 Other Regulatory and Trading Costs

There is currently no import tariffs on ostrich meat exports to the EU market, although export permits need to be issued for all ostrich products leaving Botswana. With respect to export duties, the BOC pays the Botswana government levies of P1.00 per kg of ostrich meat exported and P10.00 per untanned ostrich skin. This charge is in accordance with the Wildlife Conservation (Hunting and Licensing) Regulations, which the Department of Wildlife and National Parks (DWNP) argued was necessary to promote value addition in the development of the local industry. In 2004, BOC successfully lobbied for the transfer of farmed ostriches from the aegis of the DWNP to the Ministry of Agriculture and this should facilitate negotiations around reducing or eliminating these levies.

Apart from the EU standards, there are several other measures which impact upon the ostrich products trade. According to the government's Ostrich Management Plan Policy (OMPP), on-farm –ranch inspections are undertaken by the Department of Animal Health and Production (DAHP) to ensure compliance.

Several farm level practices have to be observed. They include the following:

- there should be no other poultry farms within one kilometre of the ostrich farms
- all operating ostrich farms should be registered and approved by the DAHP
- all ostrich farms should be open for regular inspections by DAHP for diseases and animal husbandry practices

- each farm should keep a farm diary on all farm operations, including, but not limited to, hatching, tag numbers, mortalities, veterinary inspections
- the movement of ostriches require permits from DAHP
- all ostriches should be quarantined for two weeks before slaughter at the farm⁵

Additionally, there are specific farm design requirements that must be adhered to by each operator. The OMPP also leaves room for imposing the requirement that all exported products are tagged or marked as directed by DAHP or DWNP, thereby giving these departments the power to ensure compliance with product identification regulations in the export market.

The OMPP also outlines importation and disease control rules. In order to prevent 'genetic contamination' of the ostriches in Botswana, only those birds belonging to the sub-species *struthio camelus australis* (blue neck), which is native to southern Africa, may be imported into the country. To ensure adherence to this policy, import certificates are required from the veterinary authorities in the exporting countries. It is important to note that the sub-species of ostrich farmed with in Botswana differs from that of the mainstream South African industry which favours the African black (*struthio camelus domesticus*). The African black is thought to producer a higher quality hide while the blue neck produces a higher carcass weight.

To ensure compliance with animal health standards, all imported birds are also required to be accompanied by a health certificate, stating that they are disease free or that they do not have internal or external parasites, and that the country of origin is free of Newcastle's Disease, avian influenza, salmonellosis, avian pox, and 'outbreaks of the known or suspected viral enteritides'. The certificate should also state that animals in the area of origin are not vaccinated for Newcastle's Disease or avian influenza.

Thus, to ensure compliance with import regulations, the birds entering the country must be accompanied an import permit issued by the DAHP. On arrival, the birds are inspected by government veterinary officials and are then quarantined for 21 days, during which they are inspected and treated as required.

4.3. Land Tenure Arrangements

Current land tenure arrangements in Botswana have been identified as a regulatory constraint inhibiting ostrich production, and especially limiting new entrants into the industry. Botswana has three categories of land tenure namely, tribal, state and freehold land. Freehold land comprises only 6% of the total area

⁵ This quarantine period is an EU market requirement.

and it is privately owned. State land (23%) is owned by the state and companies and used as national parks, forest and game reserves and no settlements are permitted⁶. Tribal land makes up 71% of the total Botswana land area and exclusive use is only available through leases awarded by the various Land Boards. It is not clear who qualifies for access, furthermore there are producers who already have land allocated to them but have difficulties in changing its use from arable production for example, to ostrich farming.

5. THE INDUSTRY IN BOTSWANA

5.1 The Producers

Ostrich farming consists of several stages and there are currently only two producers in Botswana that participate in all the stages from breeding to slaughter.

The breeding of ostriches requires separate paddock construction with a stocking rate of 1 male to 2 females. Breeders require a daily 2 kg of feed per bird including during the off-season to maintain condition. During the season, eggs are collected, washed, weighed and marked. Eggs are then stored for a week at a constant 15 C and turned regularly. Prior to incubation, the eggs are pre-heated to 38 C. This temperature must be maintained for the incubation period of 38 days that also requires regular turning. Finally eggs are placed in hatching trays on day 39⁷.

As with egg collection and storage, chick handling is a labour-intensive process only appropriate with a significant scale of production. The umbilicus requires daily treatment for a week to prevent infection; and for a further 4-6 weeks, the chicks require attention in disinfected covered pens (or chick houses). Only then can chicks be left to stay outside, although shelter against rain and storms needs to be provided for up to ten weeks.

All chicks are tagged at birth with egg numbers etc going back to the parent stock. Tagging is a requirement in terms of the EU regulations and the need for complete farm trace-back of meat products.

Once outside, birds require 2 kg per day of feed from 4-6 months onwards. They are moved into the quarantine area as weight gains are made and, at 95 kgs, the birds are sent for slaughter, normally between 9 and 11 months. The quarantine period is normally two weeks: no medicines or other treatments are allowed in this period and DAHP certification must be secured.

⁶ A small percentage of this land is located in urban areas is allocated for residential purposes.

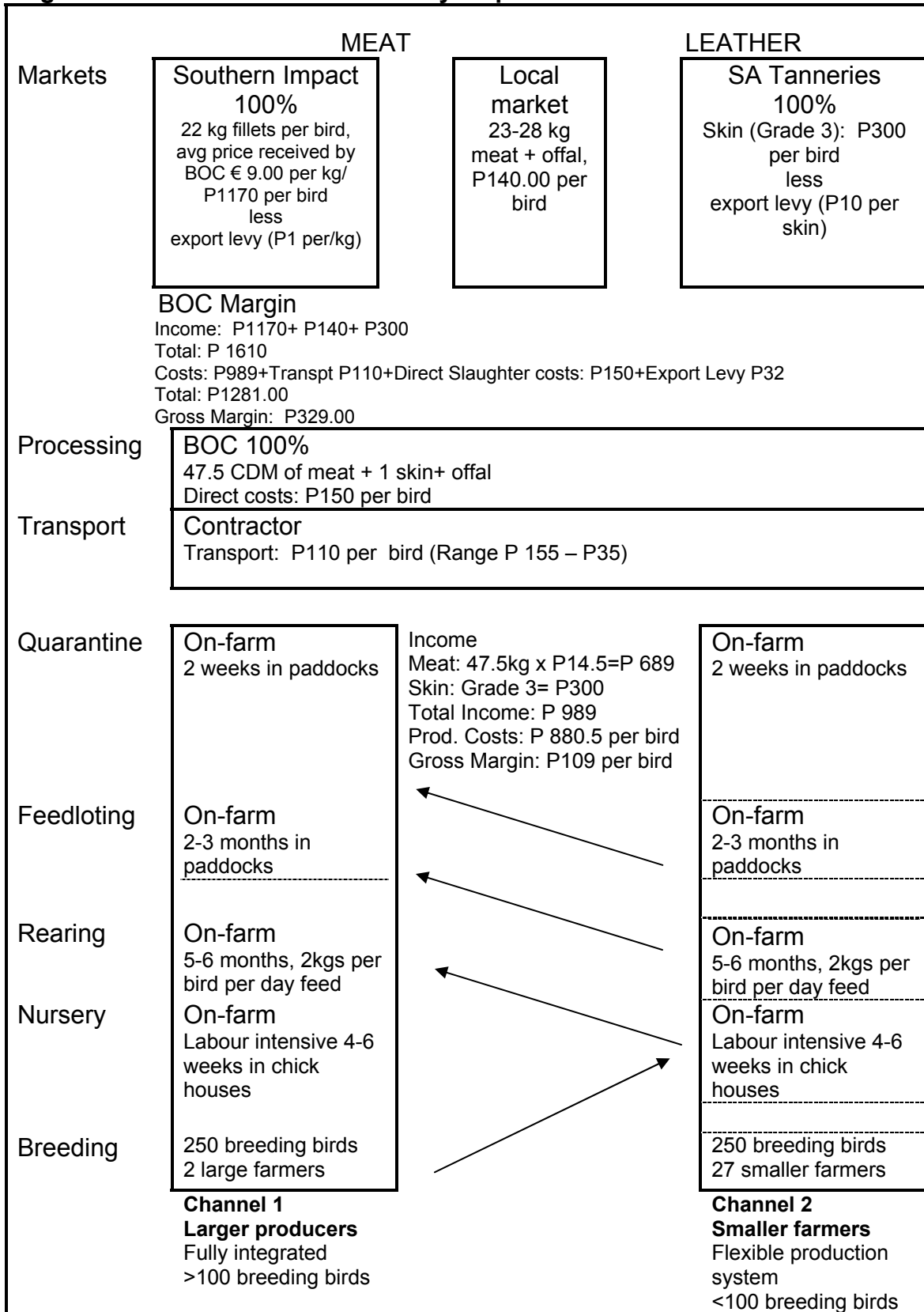
⁷ It is also possible to raise chicks without incubation facilities. Parents can brood the eggs and then the chicks are handed over to foster parents. It is also possible to raise young birds without parents from day 5 onwards.

According to a report by the Botswana Ostrich Farmers Association (BOFA), there are currently about 29 active farmers in the country, holding a total of about 500 breeding hens (BOFA, 2004). However, about half of these ostriches are held by two large scale producers, with the other half shared by the remaining producers, who farm much smaller numbers.

Figure 5 below provides an industry map of the Botswana ostrich industry and graphically summarises the structure and performance of the industry. As can be seen two main production channels can be identified namely large producers and small producers. The larger producers are engaged in all the activities described above and as breeder farms, they derive income from the sale of chicks.

With respect to smaller producers, ostrich rearing is in many cases a secondary source of income and these producers tend to enter and exit the industry in response to market conditions. They do not necessarily hold breeder birds and raise the chicks to slaughter. They may for example buy young birds (> 3months) to rear to slaughter, or sell fertile eggs to other producers who hatch and raise the chicks.

Figure 5: Botswana Ostrich Industry Map



The majority of the current producers are in the Mochudi, Mahalapye, Gaborone, Molepolele, Tuli Block and Lobatse areas. Together, they farmed 3,000 birds in 2002; 4,600 in 2003 and 5,000 in 2004. This is a significant growth, and BOC estimates that within 5 years there will be sufficient production to ensure the viability of the abattoir.

A model that has not developed as yet in Botswana (although there is at least one financing proposal) is for outgrowers contracted to a large producer. This model has been adopted by in both Zimbabwe and the Eastern Cape.

In this model, the breeder farm supplies 100 day old chicks to small producers (normally located in a group of adjacent settlements) capable of rearing up to 100 birds and willing to install necessary protective fencing and watering facilities. Feed is also provided by the breeder farm along with technical and veterinary support. After 5-6 months, the birds are returned to the breeder farm for feedlotting and through to slaughter. There is only one payment, at the point when birds are returned, and poor animal husbandry (leading to high mortality, for example) leads to a withdrawal of the outgrower 'contract'.

This is clearly an extension- intensive form of production but in Zimbabwe and Eastern Cape it does appear to have been undertaken with success, producing 9,000 and 5,000 birds respectively in 2003-04 and significant additional income for around 150 rural households.

5.2 Investment Requirements

The capital costs of entering into the commercial breeding and rearing of ostriches are difficult to calculate on a generalised basis as new entrants will start from different bases. However, let it be assumed that land with some fencing and farm roads has already been acquired, water and electricity is available, vehicles already purchased, and technical skills already available or available free-of-charge from BOC or the government.

Under such circumstances, the capital requirement for starting operations with around 40 breeder birds⁸ (the recommended minimum for economic production) is in the order of P 1.5 million.

This would cover three main areas of expenditure:

⁸ Assuming a rate of 1 male to 2 females, the average hen lays 35 eggs per hen per year of which 60% can be assumed to hatch (this is a very conservative hatching rate- norm is 75%). With a survival rate of 78%, 40 breeding birds should produce approximately 437 slaughter birds per annum.

- construction and equipment (paddocks for breeding birds, feedlot paddocks, quarantine pens, water and feed troughs, hatchery, chick houses etc)
- purchase of breeder birds and their feed and medicines
- labour and operating expenses for start-up period

There are, therefore, substantial capital costs in establishing ostrich farming. However, the returns are likely to be higher than for the principal land use alternative, beef farming.

A single cow, requiring at least 4ha of grazing, can produce one slaughter animal per year, weighing approximately 450kg and yielding around 240 kg of meat. By comparison, an ostrich hen, on 0.25 ha, can produce between 40 and 60 eggs per year. With a 70% hatching rate and 80% survival rate, this produces at least 20 slaughter birds at 47.5 kg cold dressed mass (CDM) per bird (yielding 950 kg of meat in all).

Furthermore, an ostrich grows to slaughter (at 95kg) within 10 months with an overall food intake of around 400kg. This can be compared to food requirements for a weaner purchased weighing 300kg and then fed to 450kg over a longer period than 10 months. In this case, the food intake would be around 900 kg.

These latter calculations are important as feeding is a major cost component in livestock rearing (over 80% in the case of ostriches). Thus better food to mass gain ratios, and shorter growth periods, favour ostrich production over beef.

5.3 Production Costs and Margins⁹

The model produced by BOC in May 2004 is based upon a farm producing its own chicks, a 60% hatching rate¹⁰ and purchased feed. It makes provision for bank interest, 'overheads', and labour costs (but not veterinary supplies or transport costs. In the case of medicine costs, a business plan submitted to the ADF puts these at only P14.00 per bird).

Table 1: Production Costs per bird

| | Cost per bird | Cost per bird (own feed) |
|----------------|----------------------|---------------------------------|
| Cost per chick | 70.07 | 70.07 |
| Feed per bird | 625.41 | 550.70 |

⁹ The costs and margins of the Botswana ostrich industry are very dependent on the PULA/Euro exchange rate – any significant movement will dramatically alter these ratios.

¹⁰ Note this is a very conservative figure and an industry average of 75% has been proposed as the norm by some industry participants.

| | | |
|--------------------------|--------|--------|
| Overheads 20% | 125.08 | 110.15 |
| Interest 300 days at 17% | 60.00 | 60.00 |
| Total Costs Pula | 880.56 | 791.00 |

Source: BOC

On this basis, it appears to cost P880.56 to get a bird to slaughter, with feed alone costing P625.00. Using farm produced feed supplements (lucerne, roughage) the total cost reduces to P791.00 (feed now costs P550 per bird)

However, the return on the meat of a slaughtered bird weighing 95 kg (and thus 47.5 kg CDM) only produces -at P14.50 per kg - P689. 00. BOC calculate that, for profitability, at least a third grade skin is required, securing an additional P300.00 per bird.

A fourth grade skin, at P80.00, would mean that production costs were over P100.00 higher than the realised price. However, a second grade skin, at P400.00, would secure a P200.00 profit margin per bird.

The BOC will only be able to increase its current price of P14.50 per kg if the realised Euro price and the Euro/Pula exchange rate permits, but it now introducing transport charges for birds brought by BOC transport to the abattoir.

Whatever the impact of these price adjustments, margins are unlikely to be especially attractive and, at the farm level, this points – according to BOC - to three areas of husbandry requiring attention to increase profitability:

- improved stock management to produce better skin grades
- improved hatching and survival rates
- more production of home-grown feeds

With respect to the relative production efficiency of the Botswana industry, direct comparisons with South African production norms, for example, should be treated with caution as different sub-species are farmed with. The African black can be considered a “skin bird” while the blue neck produces a larger quantity of meat. In terms of production efficiency, the Botswana industry produces a heavier bird in a relatively shorter space of time however the overall quality of the skin is poor. Part of this difference pertains to genetic factors (such as skin size and number of quill knobs), however the number of marks and scratches per skin also plays a key role and here good management is of importance. While there is no official grading standard for the ostrich industry as a whole, National Ostrich Processors of South Africa (NOPSA) have a grading system which can be considered the regional norm and this is presented in Appendix 1.

Table 2. Production efficiency: South Africa vs Botswana

| | South Africa | Botswana |
|--------------------------|---------------------|-----------------|
| Average carcass mass | 42.00 kg | 47.50 kg |
| Average age at slaughter | 12 months | 10 months |
| Skin grading % | | |
| First | 35 | 15 |
| Second | 45 | 39 |
| Third and below | 20 | 47 |
| Producer Income % | | |
| Meat | 42 | 70 |
| Skin | 58 | 30 |

Source: BOC, Van Zyl (2001)

With respect to home grown feeds, a typical producer in the Oudtshoorn district of South Africa (largest concentration of ostrich farmers) will produce 50% of his feed requirements (lucern) and buy in the rest (Nel pers comm).

5.4 Processing and Marketing Costs

The success of the ostrich industry depends upon the viability of the BOC as the sole marketing channel for ostrich products in Botswana. The success of BOC itself will depend upon its ability to access world markets and negotiate prices which are attractive to producers.

The company was formed by producers in 2000 and it has a 50 year lease on the Gaborone abattoir which was built by the Botswana Development Corporation (BDC) at a cost of P14 million and handed to the Government of Botswana.

Since beginning its operation, the abattoir has run at much less than full capacity due to low supply volume even though the BOC guarantees to buy all slaughter stock offered for sale. Despite the guarantee, the BOC attributes the low supply volume partly to the absence of anticipated meat export market opportunities, and claims that the situation has caused the closure of some farm-level production units. However, since the BOC has been granted approval to export to the EU market, it is hopeful for a positive supply response from both existing and new producers.

From the time the abattoir was opened in 2002 until it received EU approval in August of 2004, it had accumulated a stock of about 20 tons of ostrich meat, which it began selling this year to the South African market. Sales to South Africa were at below-cost prices, in order to dispose of the stock. Due to low supply volumes, BOC has run at a loss since it began operating. As a result, it has been unable to service the loan it obtained from BDC.

Since the access to the EU market was secured, the BOC has been able to supply around 3 tons per month to the wholesale trade in Belgium (which is a very small amount compared to the 350 tons supplied to the EU as a whole by

South African exporters). The BOC is currently selling chilled rather than frozen meat. The costs of transporting the former are significantly higher, but with payment within a week of shipment, chilled meat products are helpful to cash flow.

Although there are no records to assess current profitability, production statistics may provide some insights. In 2003, 570 birds were slaughtered. It is estimated that the abattoir slaughtered a total of about 1,115 birds in 2004. This well below its capacity of 20,000 birds per year but a sharp rise to over 4,000 birds slaughtered is anticipated, based upon the number of chicks already hatched.

With respect to the BOC's gross margin per bird slaughtered this is estimated to be in the region of P470 per bird slaughtered. This figure does not take into account abattoir operating or capital costs. Given that only 1115 birds were slaughter in 2004, it is clear the BOC is not yet operating at a profit. According to BOC, the abattoir could operate profitably, or at least break even, once it handles at least 12-15,000 birds per year. Thus, even in the absence of a profitability assessment, it is safe to conclude that the abattoir is currently not operating profitably, despite the fact that, being multi-species, it also undertakes service-slaughters for beef processors in the country. The BOC anticipates that this situation will be redressed as the industry expands.

The BOC contracts with agents to sell its meat products. Currently it deals with Southern Impact which has a branch in Johannesburg and contracts with exotic meat wholesalers in Belgium on behalf of BOC.

The marketing of skins is through direct sales to tanneries in South Africa. The BOC pays the producer for skins graded at the wet stage (from P550.00 for first grade to P80.00 for fourth grade). Producers can also request BOC to transport their skins to tanneries, at a cost of P75.00 per skin, for grading at the wet blue stage which can realise a higher price. In effect, therefore, producers have a choice of either accepting the BOC grading and receiving immediate payment or waiting until BOC receives payment from the tannery and receiving that amount less P75.00.

5.5 The Role of Government

The government of Botswana has a long record of supporting the development of enterprises meant to diversify the economy, and Botswana's ostrich industry has not been left out of the quest for economic diversification.

Several policies have been developed by government to guide the development of the industry. One of these is the Ostrich Management Plan Policy of 1994, whose major objective is to promote sustainable commercial utilization of ostriches for the benefit of Botswana and its people. This policy makes a

distinction between ostrich farming and ranching. A farm in this context is 'an adequately fenced property that houses adult breeding birds which produce eggs and chicks' for commercial purposes, whereas a ranch is 'an adequately fenced property on which eggs and chicks collected from the wild are raised for commercial means'. To promote sustainability of the industry, the policy promotes ostrich farming, over ranching. While the policy acknowledges that market forces should generally prevail, it is also intended to promote value addition in the ostrich industry, before products are finally exported.

The establishment of the BOC ostrich abattoir was a related initiative by government, and its willingness to extend BDC loan facilities despite failure to repay the initial loan on schedule has demonstrated continued support to the industry.

Citizens intending to venture into ostrich farming may also benefit through the Citizen Entrepreneurial Development Agency (CEDA), an economy-wide programme intended to promote economic diversification. CEDA provides loans at highly subsidized interest rates. The level of subsidy decreases as the amount of the loan increases. Loans of P500 to P150,000 (for small-scale projects) are issued at an interest rate of 5 percent, whereas those amounting to P150,001 – P2 million (for medium –scale projects) are issued at an interest rate of 7 percent. Any loans worth more than P2 million are issued at the market rate of interest.

However, the most important condition is that projects have to demonstrate commercial viability, and according to BOC management, CEDA has so far not been sufficiently forthcoming in funding ostrich farming projects that have had difficulty in effectively demonstrating their viability without access to the EU market. CEDA, since its inception, has only approved a total of 10 ostrich projects for funding. Furthermore since the EU granted export approval no additional projects have been approved by CEDA for funding¹¹.

In terms of technical support, the government has deployed its veterinary and meat inspecting staff to work full time at the abattoir, and the Ministry of Agriculture through the Department of Animal Health and Production has recently trained a number of its staff to deal with extension training for ostrich farming. The BOC itself has also employed extension staff to provide advisory services to existing ostrich farmers and potential entrants into the industry. These services include the sourcing of inputs such as breeding birds and the arrangement of transport to the abattoir.

The government also plans to establish an ostrich research station at Dibete. This will serve as a multiplication farm producing both breeding stock and chicks

¹¹It is also important to note that CEDA requires fairly high collateral levels for all loans that it extends.

for sale to farmers; and the station will have a model farm to train farmers in ostrich rearing.

6. CONCLUSIONS AND SUMMARY OF INTERVENTION OPPORTUNITIES

The analysis presented in this overview report concluded that while the international market for ostrich products remains buoyant, it is also highly volatile. As a niche product, ostrich meat it is subject to shifting consumer preferences similarly the ostrich leather market is tied to overall economic conditions and specifically growth in disposable income.

As noted in the report, from a regional perspective the Botswana industry is still in its infancy. The growth of the industry was initially hampered by the absence of an ostrich abattoir, once this was built (completed in 2002) there was an additional lag of two years before export accreditation was achieved in August 2004. With respect to the potential of the industry to development and prosper in the medium term, the following conclusions can be drawn from the analysis:

- **Supportive government and economic policies:** In general the overall policy environment of the Botswana industry can be considered supportive. Macro-economic stability coupled with industry-level interventions are contributing to its development. The recent transfer of industry management to the Department of Agriculture has strengthened the industry and reduced the cost of regulatory compliance.
- **Established efficient and credible Department of Animal Health and Production in the Ministry of Agriculture:** Botswana has a track record of successful exports of beef products to the European Union and much of this success can be attributed to its animal health authority. A recent article in the South Africa press drew attention to the fact that latest EU regulatory policy is shifting away from abattoir design and processing systems and moving towards evaluating the capacity of the “responsible authority” of any particular country to carry out inspections and to ensure EU regulations are adhered to.
- **Existence of an EU accredited abattoir** with the capacity to slaughter 20,000 birds per annum is a strength of the local industry. The challenge in the medium term will be to contain operating losses until break-even throughput is achieved (12,000-15,000 animals).
- In terms of industry weakness, BOC has a **limited trading record**, in addition there is a very small local demand for ostrich meat. The implication of this is short term price volatility. The ostrich product market is inherently volatile, this volatility is exacerbated by the fact that without large volumes the Botswana industry will be a price taker in both the meat and skin market.

- Farmers need to maximize returns per bird slaughtered and improved **production management practices** must to be followed to ensure better skin grading. A Grade 3 skin realizes a very small gross margin per bird slaughtered compared with a Grade 1. Similarly where possible, home production of lucern should be carried out leading to a significant reduction in feed costs.
- **Production costs:** The Botswana ostrich industry can be considered a relatively high cost industry, this attributable to the location of farms in terms of distance from input suppliers and the abattoir. High cost of feed is also problematic, feed makes up approximately 80% of total ostrich production costs.
- **Resource availability** also appears to be inhibiting the development of the industry. A supply of abundant good quality water is missing furthermore access to land for intensive animal production remains problematic under the current tenure system.
- **Profitability:** From the perspective of producers, the ostrich industry is unlikely to generate abnormal profits. Assuming above average management practices are followed the expected gross return on investment (R1,5 million, 40 breeding birds, 437 slaughter birds) is in the region of 9%.

If 9% can be considered the industry return on investment, what support can the Government of Botswana offer the industry to enhance profitability and long term competitiveness?

Firstly expenditure on **research and development** is critical, while there are plans to establish an ostrich research station this must be implemented as soon as possible. Secondly, **improved access to finance** (loan capital and short term financing) needs be facilitated. The fact that CEDA appears to be reticent in funding ostrich projects has to be addressed and negotiated on an industry level. Thirdly if the Government of Botswana is serious about export diversification, rather than taxing the industry through the imposition of an export levy (average of Pula 32 per bird) its should be **offering an export incentive**. An export levy to encourage local value-adding should only be implemented once the industry is more mature (ie when there is an industry to tax).

Finally with respect to **input costs**, as a nett grain importer the government of Botswana needs to examine its overall trade policy to assess how these may be reduced. The Botswana Agricultural Marketing Board for example sets minimum prices (price floors) for grain crops, these prices are set at import parity plus transport costs. The SACU duty on soya oil cake and maize (the main constituents of animal feed) are 6.6% and R0.1374 per kg respectively – these duties represent the production costs savings that could accrue to the industry.

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2. People Interviewed

| Name | Organization | Title |
|----------------|-------------------------------|--------------------------|
| Ms T Classen | Southern Impact Pty (Ltd) | Group Marketing Manager |
| Mr Dipholo | DAHP, Ministry of Agriculture | Senior Technical Officer |
| Ms E Patterson | Botswana Ostrich Company | CEO |
| Mr M Molosiwa | Botswana Ostrich Company | Extension Officer |
| Mr Phillips | Botswana Ostrich Company | Abattoir Manager |

| | | |
|----------|---|--------------------------|
| Mr J Nel | Western Cape Department of Agriculture | Senior Extension Officer |
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APPENDIX ONE

NOPSA Grading Standard

A. Aim

The aim of this grading standard is to stipulate a norm for different grades of ostrich leather. All ostrich leather marketed by NOPSA members will comply with this standard.

B. Definitions

1. A defect can be: a hole, a scratch, a loose scab, a healed wound or bacterial damage.
2. The crown is the area with quills, except in the neck, down to the wingfold and also the stomach quill.
3. For grading purposes the crown is divided into four quarters.
4. Dividing lines: The lines dividing the crown area in 4 quarters will be 25mm wide. The vertical line will stretch from base of neck to the bottom of crown and horizontal line will stretch between the widest quill on either side of crown area.

C. Grade One

1. A defect in one of the quarters as long as it is not larger than approximately 40mm x 40mm.
2. At least three quarters must be free from defects.
3. Defects on the cutting lines do not affect the grade.
4. A few less visible scars are allowed as long as they are outside the crown area.

D. Grade Two

1. A skin with defects affecting two quarters.
2. At least half the skin must be free from defects.
3. Visible defects outside the crown area are allowed and will not affect the grading.

E. Grade Three

1. At least one quarter of the skin must be free from defects.
2. Visible defects outside the crown area are allowed.

F. Grade Four

1. At least one quarter of skin must be free from defects.
2. Extensive visible defects outside the crown area are allowed and will affect

grading.

G. Trimming

1. Neck will be trimmed 20cm above featherline.
2. Leg will be trimmed in the middle of "knee".

H. General

1. Colour variations cannot be considered as an element to change the grading of leather but is it the prerogative of both buyer and seller to discuss a price adjustment.
2. Tannage cannot be considered as an element to change the grading of leather, but is it the prerogative of both buyer and seller to discuss a price adjustment.
3. Hair follicles are genetically caused defects and an extensive occurrence of it in at least two quarters will allow for a downgrading by one grade.
4. Pinholes are externally caused by bacterial damage and an extensive occurrence of it in at least two quarters will allow for a downgrading by one grade.
5. A skin is a "Torn" skin when a tear extends into the crown.
6. A natural scar is a healed scar and would remain a defect.
7. Rough surface is damaged grain.
8. "Loose grain" is where the grain is separated from the "base" of the leather.
9. "Vein marks" is a defect if it is very obvious and covering a substantial area of the skin.
10. Size:
 - A 120+
 - B 100 - 119 Price 10% less than A
 - C 80 - 99
 - D 50 - 79
 - E 30 - 49