

## Responses and reactions to Scoones et al. to 'Foot-and-mouth disease and market access: challenges for the beef industry in southern Africa'

Single resource decisions with multiple resource consequences?  
Comments by David H.M. Cumming, Percy FitzPatrick Institute,  
University of Cape Town, South Africa

The authors are to be commended for opening up the debate and outlining several alternative policy and management options for foot-and-mouth disease (FMD) and the commercial beef export industry in southern Africa. They also note that southern Africa's livestock disease control policies are caught in a colonial 'policy trap' from which they seem unable, or unwilling, to escape. The paper focuses, however, on economic, social and political trade-offs within the context of the beef trade. Wider environmental issues receive little attention. The emergence of transfrontier conservation areas and the expansion of game ranches in southern Africa receive only brief mention in relation to disease risk. The substantial past, and potential future, environmental costs of livestock disease control strategies in southern Africa were not examined. Neither were the economic opportunity costs of FMD (and tsetse) control practices for alternative land use practices examined.

The role of FMD control fences in the decline of vast herds of antelope in Botswana is well known. With the emerging high values of wildlife and the revenue it can generate from tourism and hunting, these lost herds represent an enormous opportunity cost to the country and to the rural communities of the Kalahari. In Zimbabwe, the eradication of buffalo from ranches in the South East Lowveld halved the returns to wildlife ranches in an area that subsequently turned out to be more profitable and sustainable under wildlife than commercial cattle ranching. During the 1980s the Zimbabwe Government investment in upgrading veterinary services and abattoirs to meet EEC standards exceeded the returns from beef exports resulting in a net loss to the country (Jansen et al., 1992). During the same period foreign currency returns from wildlife-based tourism were about ten times higher than those from beef with minimal, if any, subsidies. Similar considerations presently apply in Namibia where the contribution of wildlife tourism to GDP greatly exceeds that from livestock (Chris Brown, pers. comm. 2008)

Transfrontier conservation areas (TFCAs) represent an attempt to re-establish ecological, social and cultural links and connectivity between countries and ecosystems over large landscapes. While national disease control strategies and beef export markets at local levels may appear to be threatened by these developments, the wider economic and environmental gains may well prove to

be greater and more cost effective. The urgent need for these critical studies to be undertaken has been emphasized by the AHEAD initiative (e.g. Cumming et al., 2004).

The insightful analysis by Scoones et al. suggests that southern Africa's pre-occupation with exports to Europe may be misplaced. A comparison of the livestock holdings and levels of production in southern Africa with those of Argentina, Brazil and Uruguay (and in Europe itself) lead me to note that southern Africa's comparative advantage in using its mostly arid and semi-arid rangelands lies not in commercial beef exports to Europe but in its incomparable wildlife and biodiversity-based productive land uses. These entail lower environmental and public costs, generate greater revenue and employment and serve a wider social and cultural constituency than the commercial beef export industry.

### *References*

Jansen, D., Bond, I. and Child, B. (1992) 'Cattle, wildlife, both or neither: results of a financial and economic survey of commercial ranches in southern Zimbabwe', Project Paper No. 27, WWF Multispecies Animal Production Systems, Harare, Zimbabwe.

Cumming, D. H. M. and AHEAD Great Limpopo TFCA Working Group (2004) 'Sustaining animal health and ecosystem services in large landscapes' [online], available from: [http://www.wcs-ahead.org/workinggrps\\_limpopo.html](http://www.wcs-ahead.org/workinggrps_limpopo.html) [accessed 1 April 2010].

### **Comments by Dr Stuart Hargreaves, Chief Veterinary Officer, Department of Veterinary Services, Ministry of Agriculture, Harare, Zimbabwe**

Generally, the concepts raised in the paper are supported. As Zimbabwe is no longer exporting beef to Europe, the other options for export of animal products are being followed, such as exports to regional markets, and markets in Asia such as China and Malaysia.

The export of beef to Europe had beneficial side effects in that if a country had attained export standards for the European Union (EU), it would automatically enable exports to almost all other international markets. Exports to Europe were generally accepted as the 'gold standard'.

The paper makes reference to the 'disease-free commercial sector', implying that exports to Europe benefited only the commercial farming sector. This is the case with Namibia, where the Northern Communal Areas are excluded from the EU export zone. However, in the case of Zimbabwe, the export zones were developed on the status of freedom from FMD and not on whether the area was commercial or communal land. Zonation status depended on the ability to which a particular area could be designated FMD free, and not on whether it was communal or commercial land.

The traditional way of designating FMD free areas by fencing is expensive to establish and difficult to maintain, and as mentioned in the paper alternative

approaches should be followed. Countries that have achieved exports to the EU through the traditional methods of developing FMD free areas by fencing and vaccination, are reluctant to change to, or to promote, other alternatives such as commodity based trade.

Fences between Zimbabwe and Botswana will not stop the spread of FMD crossing the fence if there is a disparity in pricing of livestock between the two countries. When Zimbabwe was exporting to the EU, there was a parity of the price of beef within and outside of the EU export zone. This reduced the incentive to move animals illegally from one zone to another.

The surveillance systems established for FMD covered not just FMD, but catered for other diseases that could be detected clinically, and also for disease vectors such as ticks.

Exports from FMD free areas with vaccination have not been promoted in Zimbabwe due to the high cost of FMD vaccinations. The concept of FMD freedom with vaccination is used in South America to good effect. The southern African region, I believe, is more complicated as vaccine strains that are effective against all the SAT field strains are difficult to find.

Africa is certainly waking up and having more influence in the international standard setting process within the OIE (the *Office International des Epizooties*, which is responsible for setting global standards on animal health). Africa is becoming more unified and the strategies used during the OIE World Assembly, are now coordinated through input from AU-IBAR (African Union/ Interafrican Bureau for Animal Resources). Africa is strongly supporting the concept of commodity based trade, and with a coordinated effort from all the 52 member states, it is hoped that deboned, matured beef with a pH of less than six and with the removal of the lymph nodes can be accepted as a commodity that is a negligible risk for FMD virus. Science has shown that this is true.

Africa is also proposing that compartmentalization should be applied to FMD, and can be applied to such establishments as feed lots. The OIE is proposing that if compartmentalization is accepted for FMD by the OIE World Assembly, then the compartment should not be forced to exclude vaccination for FMD. Again, Africa is proposing that as compartmentalization and vaccination is accepted for other diseases, FMD free compartments with vaccination, should also be accepted.

The control of FMD is not just for the safe exports of beef, or meat and other livestock products, but it is important for the safety of the domestic market. FMD is a debilitating, highly contagious disease, and it needs to be controlled in order to mitigate against the production losses caused by this disease. This is especially so for the dairy sector, but also for the negative impact the disease could have on the draught ox if the disease was to occur at the time of ploughing.

### Comments by Karl M. Rich, Norwegian Institute of International Affairs and International Livestock Research Institute

This paper focuses needed attention on an issue that is extremely relevant to developing countries: the need to re-evaluate regulations concerning global trade in livestock and livestock products. The authors do a fine job synthesizing the historical, political, and marketing contexts behind current narratives that govern the livestock sector in southern Africa and the challenges faced by southern African producers in light of the dynamism of changing public and private sector standards.

However, to my mind, the paper overlooks an important part of the story – whether African livestock producers are even economically competitive enough to make their market access scenarios viable. The paper implicitly presupposes that regulations governing trade are the main constraint to market access for southern African producers and that with different trading standards, a constellation of different market access scenarios will emerge. Recent research by Rich (2009), Rich and Perry (2009), and Rich, Perry, and Kaitibie (2009) casts some of this potential in doubt. Market access to the EU, for example, is predicated entirely on preferential duty-free, quota-free access, and even still, southern African producers are only barely competitive with Brazilian and Argentine producers that lack such access. In other high-potential third country markets (e.g. Middle East, Asia), African producers are neither competitive with nor have the scale of either Brazil or India, which dominate the middle and low-end markets for beef globally. Furthermore, while commodity-based trade would rightly remedy many of the inconsistencies that plague the livestock trade, such a scenario would likely *increase* the competition faced by African suppliers in global markets and advantage large-scale commodity suppliers of beef in South America and South Asia. Keep in mind that the SADC (Southern African Development Community) countries highlighted in the paper (Botswana, South Africa, Zimbabwe, and Namibia) *combined* have fewer animals than either Pakistan or Argentina, for example, while South Africa is increasingly a net importer of beef. Consequently, it is not clear whether such trade scenarios make sense for SADC countries, outside of a few high-value niche markets, not to mention the increased pressure that SADC markets will face from imports from outside of Africa. Rather, the larger issue for SADC (and Africa in general) is one of productivity and supply chain management to reduce costs and loss of trade.

A crucial research and policy question is thus finding ways to improve the potential that SADC has for livestock production within Africa. The broader SADC region would likely benefit from increased regional production modalities that leverage the feeding resources of countries such as Angola, Zambia, and Tanzania with the technical and management expertise in livestock production of Namibia, Botswana, and South Africa. This would necessitate member countries developing coordinated policies that integrate production systems across borders and provide SADC with the scale needed to compete with competitors in domestic and export markets alike.

### References

- Rich K.M., (2009) 'What can Africa contribute to global meat demand: opportunities and constraints', *Outlook on Agriculture* 38 (3), 223–233.
- Rich K.M. and Perry B.D. (2009) *The impact of changing global animal health trading standards on market access for livestock products by developing countries: an assessment of commodity-based trade*, Final donor report for the Department for International Development (DFID), UK.
- Rich K.M., Perry B.D., and Kaitibie S. (2009) 'Commodity-based trade and market access for developing country livestock products: the case of beef exports from Ethiopia', *International Food and Agribusiness Management Review* 12 (3), 1–22.

### Comments by Andy Catley, Tufts University, Feinstein International Center, Addis Ababa, Ethiopia

This paper is a very useful analysis of livestock disease control options in relation to market access, especially export markets. It presents an analytical framework (Figure 1) which is generic and widely applicable beyond FMD in southern Africa, as are the eight contexts which are described.

From the perspective of the Horn of Africa, the paper is useful because policy makers in some countries in the Horn often try to emulate southern Africa systems. In particular, the beef exports from Botswana to the EU are seen as a success story to be repeated elsewhere. But as the paper shows, these systems in the south are fragile, the benefits of beef exports may well be time-bound, and yet the investments have been substantial. Another important lesson seems to be that focusing on the technical issues alone rarely improves or sustains market access because standards are subject to interpretation, and, are constantly changing. This is important because so much of the policy debate revolves around technical issues and from a development aid perspective, the focus is often on technical capacities. As the paper suggests, relationships, negotiation, lobbying and trust are central to gaining market access. In the Horn, this is exemplified by Sudan's relatively rapid resumption following market bans of livestock exports to the Gulf States due to cultural and political ties with trading partners. At the same time, private exporters from Somalia – a country with limited formal governance – were exporting chilled meat to the Gulf with limited certification or inspection.

An interesting similarity between southern Africa and the Horn is the concept of cross-border ecosystems and the challenges of regional harmonization of policies. In the south this is shown by the emergence of transfrontier conservation areas and wildlife. In the Horn, it relates more to cross-border pastoral ecosystems and livestock marketing. While technically these systems are ecologically and economically rational, politically the presence of colonial-era borders means that cross-border movement is often illegal. In addition, the policies on opposite sides of a border can be contradictory. Like southern Africa, strong regional bodies are needed in the Horn to rationalize and harmonize policies in these areas, and some progress is evident through

COMESA (the Common Market for Eastern and Southern Africa) and the Intergovernmental Authority for Development (IGAD) in Eastern Africa. For example, the emerging COMESA Policy Framework for Food Security in Pastoralist Areas emphasizes policy support to cross-border pastoral mobility and livestock marketing.

A key difference between the two regions is the level of political instability and conflict, with the Horn characterized by 'complex emergencies'. In part, the capacities of veterinary departments and certification systems depend on higher levels of governance. With this in mind, the analytical framework (Figure 1) might be expanded to include internal risks related to political stability and overall governance. In southern Africa these risks were difficult to foresee (e.g. the political and economic collapse of Zimbabwe) whereas in the Horn they are self-evident in, for example, Somalia, Sudan and Eritrea. This implies that disease control options which depend on more technically demanding, relatively expensive and long-term support from government become more risky when political contexts are known to be fragile. At the time of reviewing the paper, aid agencies were warning of the breakdown of the Comprehensive Peace Agreement in Sudan and a return to civil war. Here the context includes the huge cattle-rearing areas of South Sudan, and potential for regional trade.

In terms of commodity-based trade, the relevance of this approach is evident from Somalia, where government capacity is minimal. Well before the new thinking on commodity-based trade started to emerge in AU-IBAR, private abattoirs in Somalia were producing chilled meat which was flown directly to countries in the Gulf. This trade continues and as far as I know, there have been no outbreaks of livestock disease in these countries as a result of the Somali meat imports. If true, this means around 10 years of safe trade from a country which for most of the time, had no government.

A final thought is the issue of poverty reduction. Recent research in the Horn indicates that in terms of livestock exports from pastoralist areas, the export trade benefits mainly middle and higher wealth groups. As commercialization of pastoralist systems moves forwards, there may be a redistribution of livestock from poorer to richer household, with poorer pastoralists falling out of the system. Some of these people may work as contract herders, but many become destitute and targets for the various safety net and social protection programmes in countries such as Kenya and Ethiopia. Pastoralism and livestock exports will continue, but commercialization is clearly an important trend and one which seems not to help the poor.

**Comments by Martin Cooke, Deputy Director, Ethical Trading Initiative and Chair, Procurement for Development Forum, convened by DFID and Chatham House, London**

We must think in terms of a demand chain, as distinct from a supply chain, probably pulled by remote consumers, who know little and possibly care

less about African pastoralists or about FMD. For them, price, performance and quality are the determinants. They will be as happy to buy Uruguayan beef as they will to buy Ugandan, Brazilian as Botswanan. Remember that most southern beef in northern markets goes into food service or further processing. It probably doesn't, as the paper contends, end up on supermarket shelves in distant export markets, at least not identifiably so. However there could be a good story to interest consumers in rangeland beef, but that is beyond the scope of this paper and will require considerable marketing investment to unlock.

The paper explores options for FMD control with the aim of securing greater benefit for a wider group of stakeholders in the southern African beef industry. Understandably it focuses on the failings of the current, hugely costly system and makes the argument for what certainly seems to be a better one. Notwithstanding the veterinary scientific arguments though, ultimately this is about cost-benefit, not simply about how much beef you might produce or export, but about how much quantum profit you can make from this trade at each stage of the chain. The paper outlines six markets from EU to local and describes strategies for approaching them. The lesson from the South American beef industry is that, starting on the farm, every animal must be potentially available to all markets. It is likely that a bullock slaughtered in Rosario, Argentina, will end up as steak in one continent, canned beef in another, salami casings in a third and on the barbecue in Buenos Aires.

Drilling down the value chain, it is certainly possible to see how better arrangements for FMD control could drive out cost and open up the possibility of export for a wider group of producers. Given the demographic shift from rural to urban in Africa itself, it is likely too that local intra-regional demand will increase substantially. Where infrastructure permits and volume drivers exist, growth of export and domestic markets can be synergistic. Export markets can be unashamedly demanding. The greatest challenge to countries wishing to take advantage of these opportunities, as it is also to FMD control, is supply chain integrity.

If we really want to create value and well-being for African pastoralists, we need to find a way to tell the great story of African rangeland beef to its many consumers and to all the links in the chain from plains to plate. It's about multivalent products and 'What's in it for me?' at every step.

### **Comments by Siboniso Moyo, Regional Representative for southern Africa, International Livestock Research Institute (ILRI)**

Thank you for the opportunity to write a commentary on this paper. The paper provides a detailed historical background and situation analysis of the foot-and-mouth disease and market access in the beef industry in southern Africa. The dualistic nature (large-scale commercial and smallholder sector) of the livestock industry in the southern Africa region influenced the

formulation of the policies. It is estimated that between 70–80 per cent of the animals are now in the hands of the smallholder sector. One of the challenges the policy makers are facing is how to unlock the potential of this sector so it can contribute meaningfully to the formal market. The smallholder sector faces challenges and opportunities related to issues of livestock ownership, land ownership, production systems and institutional arrangements, to mention but a few. The highlighted challenges and opportunities require capacity strengthening of the farmers, market players, industry actors, public, private and community-based organizations in order to ensure adequate response by the industry.

The paper raises the point of broadening the options for trade to include regional and Asian markets. I agree with the suggestion that major market opportunities exist in the local and regional markets. This is a change in thinking from the past where this region's focus has mainly been on the EU market. However, as long as the disease control, quality requirements and the volume requirements imposed by the markets remain too stringent, the smallholders will not benefit, unless they are empowered to meet these requirements. As the countries prepare for negotiations in the planned free trade area (SADC, COMESA and EAC, the East African Community), they should be realistic about the practical situations that exist in the different countries if this market is to be accessible to the majority of the smallholders. Another point that needs emphasis is that disease control programmes should be considered in a broader value chain context as interventions on animal health risks alone might not pay off if the main problem is that the products are not competitive because of problems of productivity (breeds and feeds).

The southern Africa region needs to effectively demonstrate that it can deliver safe products in the presence of the buffaloes, establishment of TFCAs and constrained veterinary delivery systems (e.g. limited resources). This confidence can be built through reliable evidence-based information on the safety of the products.

**Comments by Professor Alex I. Donaldson, formerly head of the Institute for Animal Health's Pirbright Laboratory, the OIE/FAO World Reference Laboratory for Foot and Mouth Disease, currently Visiting Professor Royal Veterinary College, London and Managing Director, Bio-Vet Solutions Ltd, Guildford**

The FMD situation in southern Africa has deteriorated in recent years, especially in Zimbabwe, where economic collapse, a weakened veterinary service and failure of FMD prevention and control has led to widespread outbreaks and suspension of the beef trade to the EU. Lack of movement control in Zimbabwe has resulted in occasional spill-over of the disease to Botswana with disruption of its beef export trade. Other changes have increased the



market challenges to the beef trading countries of southern Africa and include: higher export standards demanded by the EU; reduced government support; and expansion of TFCAs. However, greater demand for beef in the Middle East and China has created new opportunities. The authors of the paper provide a comprehensive description of the fast-changing political, economic, market and technological scenarios and discuss these in the context of market access and disease control strategies. In regard to the latter they highlight the fact that the range of scientifically-accepted options is greater than is often thought and extends beyond the standard (expensive and often unattainable) assumption that the only option is the 'disease freedom' pathway towards eradication. The authors summarize the different market access and disease control scenarios and provide a schematic matrix of the policy options which should serve as a valuable guide for decision makers.

The most realistic short-term option for the beef trading countries of southern Africa is probably the management of FMD and expansion of high volume, lower unit value trade in local markets, domestic urban markets and the SADC region – termed the default option by the authors. Access to high-medium value emerging markets in the Middle East and Asia may be possible when international bodies are persuaded that commodity-based trade is safe and can proceed under agreed standards. A quarantine stage is likely to be a required procedure for non-processed commodities e.g. deboned beef. The development of standards for commodity-based trade is taking place under the auspices of OIE but progress is extremely slow. Even when standards become available the countries in southern Africa which seek to expand their trade to emerging markets will probably be faced with significant operational costs and the need to establish additional infrastructure. They will, therefore, be at a disadvantage relative to their South America competitors and so achieving this objective may be a less attractive option.

### **Comments by Paul J. Strydom, General Manager, Meat Board of Namibia**

The paper presents a case for increased meat trade/exports within and from the region to alleviate poverty for the majority of the rural population. Knowing the southern African meat (beef) industries reasonably well, the scenarios made will obviously increase meat trade and as such be wholeheartedly accepted by the trade. However, as was stated in the paper, the implementation and outcomes/results of the scenarios are not so obvious. International meat trade articulates indispensably around veterinary judgments. Without sound animal disease control measures and quality meat hygiene slaughter facilities, inter- and intra-regional meat trade is virtually impossible. Yet, despite some countries having the ability and means to export to lucrative markets, some measures imposed by importing countries are still in conflict with standards

set by bodies such as the OIE, e.g. exporting bone-in meat from OIE FMD free zones or complying to the 48 hour carcass maturation requirement.

From a trading perspective, meat trade shall only occur if there is a financial benefit to both the seller and buyer. In order to increase financial benefits, improved markets/prices than those presently available should be continuously obtained. Countries accessing lucrative markets should continue doing so. The benefits are substantial. This creates a vacuum to fill with meat products from countries within the region with different animal disease status regimes.

A multitude of reasons exist for meat trade not really improving within and from the region. The majority of reasons are mentioned in the paper. To really assist producers the ultimate status of disease freedom should be established. This will allow access to lucrative markets and create the necessary financial benefits. However, this is not always achievable due to considerable financial and human resources required as well as the recent lobby of wildlife conservationists. Alternatively, commodity-based trade offers a solution and should be developed and propagated by the veterinary fraternity, inclusive at standard setting bodies such as the OIE and WTO for application in the region. The non-negotiable point of departure must be: product safety and non-disease transmission. Unfortunately, the paper lacks specific implementation detail (requirements) to establish under which animal disease status regime the commodity-based approach will be internationally acceptable. Nevertheless, the paper gives appropriate scenarios to indicate to the reader the level of animal disease status and the availability of markets.

Still, improving meat trade, irrespective of the animal disease status regime and market, is dependent on importing country requirements and subject to approved slaughterhouses, disease surveillance and control, livestock identification and traceability, and accompanying quality assurance schemes, e.g. HACCP (Hazard Analysis and Critical Control Points). These are costly interventions which must be driven by a country's veterinary services with strong political will and financial support. Then meat trade will increase and contribute to the socioeconomic upliftment and national agricultural economy.

## **Rethinking the regulation of trade in livestock and livestock products**

**The authors respond to commentary on their paper *Foot-and-mouth disease and market access: challenges for the beef industry in southern Africa* by Ian Scoones, Alec Bishi, Neo Mapitse, Rebone Moerane, Mary Louise Penrith, Ronny Sibanda, Gavin Thomson and William Wolmer**

We would like to thank each of the commentators for their very thoughtful comments on our paper. We agree with nearly all the points made. The following is a short response:

*Southern Africa or beyond?*

While our paper was focused on the particular contexts of southern Africa, we believe – with Andy Catley – that the analysis is relevant much more widely. In other parts of Africa similar dilemmas arise, and the focus on high-value markets with high entry costs continues to provide an allure for policy makers. That southern Africa – often seen as the lead in this regard – is struggling with these issues should be an important lesson for others. Several commentators noted the value of the analytical framework presented in Figure 1. We hope it will be used – and perhaps extended – as a basis for assessing options and trade-offs in the future across Africa, and as the basis for getting real about the real challenges and opportunities of gaining market access and ensuring safe trade.

*To the EU or not?*

In the paper we noted the increasingly high costs of entry into EU markets. Even with new Economic Partnership Agreements this remains the case. As Karl Rich points out the global economics of the beef trade is skewed against Africa. Even with subsidies, tariff exemptions and trade agreements, competition with Argentina, Brazil and even India will remain a big issue. The EU, and equivalent high-end markets, however, still offer the best prices and this is a big attraction for the premium producers from southern Africa, as Paul Strydom notes. As we acknowledge in the paper, there will be some producers who will continue to produce for this market. However, the larger question raised, and highlighted by Siboniso Moyo and others, is whether this should remain the policy focus, and whether explicit or implicit subsidies should be concentrated on this trade route. Gearing up for domestic and regional markets, and ensuring that trade is both profitable and safe will require new and concerted efforts, including at regional level, as Stuart Hargreaves and Alex Donaldson note. This will require a more sophisticated understanding of demand pull, and the diverse potential customers for different parts of a single animal, as pointed out by Martin Cooke.

*Is commodity-based trade (CBT) the answer?*

Commodity-based trade offers the greatest diversity of market options at the lowest potential costs, and is suited to the endemic disease settings of Africa. While, as Hargreaves and Donaldson note, formal approval at the international level has been slow, there is growing consensus that this offers an important route to safe trade. This requires new regulations and capacities, but could open up markets for African trade. However, as Karl Rich correctly points out, such lower cost trade options also benefit Africa's competitors – and in the end the same competitive environment which will act to exclude African exports (due to market volume effects, production costs, value chain efficiencies and negotiating power). While this is true, it is certainly no

argument against encouraging a CBT approach, as this will not only facilitate trade with high- value markets, but also others, as Alex Donaldson observes. Unlocking niche markets for African rangeland beef must, as Martin Cooke argues, be an important challenge for the future.

***Can African livestock keepers trade their way out of poverty?***

A strong selling point of the CBT approach, and other market-oriented approaches to development focused on livestock commercialization has been the argument that, through trade, poorer livestock keepers can add value to their products and so reduce poverty. There are of course multiple routes to poverty reduction and a general growth in economic activity is clearly one of them. However, the distributional effects of increased trade remain unclear. As Catley notes, those who benefit most are already richer, with larger herds and with good market connections. Poorer livestock keepers may not have sufficiently large herd sizes to sell regularly and they may benefit more from market strengthening that focuses on local markets, rather than the wider export trade.

***Disease eradication or management of endemic situations?***

In Africa there is really only one option which is to manage endemic disease. This requires a different approach to that focused on area-based disease freedom. While, as Strydom argues, disease freedom is undoubtedly desirable, a focus on the 'non-negotiables' is critical. In this regard, a focus on a commodity-based approach for assessing disease risk and safety becomes crucial. In our view, a focus on an area-based approach is inappropriate and costly, although compartmentalization may offer an option in some limited settings as Hargreaves notes. The costs of such efforts however should not necessarily be borne by the public purse. If southern African exports are to compete in global markets, then lower cost, more efficient approaches are required. The implications of this are a re-gearing of veterinary and food safety systems, encompassing not only technical issues but also wider political questions, as Catley notes.

***Cattle, wildlife, both or neither?***

Wildlife is an important economic resource in dryland areas of Africa, as observed by David Cumming. Revenue streams may be higher than cattle ranching systems, and the reduction in fencing and other restrictions on movement may offer real advantages. However, it is important to identify what is being compared with what. Comparisons of wildlife with cattle ranching may look different when assessed on a per area basis, for example. And both extensive wildlife use and cattle ranching may show much lower returns compared to a smallholder mixed livestock system, linked to crop

production. Which system results in the greatest poverty reduction is also a matter of debate, but extensive systems based on elite markets – whether focused on wildlife or beef – have rarely offered broadly-distributed livelihood benefits. As Cumming points out, there are also environmental trade-offs between production and land use options which need to be part of the equation too and ultimately cattle and wildlife co-existence in integrated systems attuned to ecological, economic and cultural contexts are required.