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The Commercial Farmers Union of Zimbabwe AgriZim

Page 4

Published 12 times a year by the Commercial Farmers Union of Zimbabwe. The Commercial Farmers Union is proud to announce the launch of AgriZim - the monthly farming magazine. As the publication develops

As the publication develops over the coming months, we hope to create a useful and informative magazine packed with farming-related articles to keep producers right up to date with the latest developments in the industry. We aim to deliver quality advertising exposure to the commercial agricultural sector in Zimbabwe.

We look forward to receiving your support.

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QUOTE, UNQUOTE... "Farming looks mighty easy when your plow is a pencil and you're a thousand miles from the corn field." - Dwight D Eisenhower



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Foreword

Message From The Vice President

The beginning of this month saw the onset of the rains in earnest with good falls being recorded across the country. The early crops that I have seen to date are looking good and I hope that the season continues to go well for the few of us who are still farming.

This month also saw the CFU EGM held at our offices on the 30 November which was called for at the last AGM in August to specifically look at restructuring the Union so as to create a lean mean, effective and financially viable organization.

We at the CFU firmly believe that we have a social responsibility to all and as a result there was a need to restructure the Union to make this possible.

Our focus must now and, going into the future, be one of full representation for all within our sector regardless of their current status. We at the CFU firmly believe that we have a social responsibility to all and as a result there was a need to restructure the Union to make this possible. The EGM saw the coming together of both farmers currently farming and farmers who no longer have that opportunity due to having lost their farming businesses, debating and strategizing in an extremely positive manner. We thank all those who participated and we now feel we have a real workable structure in place with which we can now service all and we encourage everyone, regardless of their current positions, to come on board.

As we enter the month of December the festive season is now upon us and we at the Union would like to take this opportunity of wishing you all a very happy Christmas and prosperous New Year.



Charles Taffs Vice President Commercial Farmers Union

BRAZILIAN AGRICULTURE

FROM CREMAQ, PIAUÍ

The Miracle of the Cerrado



Brazil has revolutionised its own farms. Can it do the same for others?

n a remote corner of Bahia state, in north-eastern Brazil, a vast new farm is springing out of the dry bush. Thirty years ago eucalyptus and pine were planted in this part of the cerrado (Brazil's savannah). Native shrubs later reclaimed some of it. Now every field tells the story of a transformation.

Some have been cut to a litter of tree stumps and scrub; on others, charcoal-makers have moved in to reduce the rootballs to fuel; next, other fields have been levelled and prepared with lime and fertiliser; and some have already been turned into white oceans of cotton. Next season this farm at Jatobá will plant and harvest cotton, soyabeans and maize on 24,000 hectares, 200 times the size of an average farm in Iowa. It will transform a poverty-stricken part of Brazil's backlands.

Three hundred miles north, in the state of Piauí, the transformation is already complete. Three years ago the Cremaq farm was a failed experiment in growing cashews. Its barns were falling down and the scrub was reasserting its grip. Now the farm-which, like Jatobá, is owned by BrasilAgro, a company that buys and modernises neglected fields-uses radio transmitters to keep track of the weather; runs SAP software; employs 300 people under a gaúcho from southern Brazil;

has 200km (124 miles) of new roads criss-crossing the fields; and, at harvest time, resounds to the thunder of lorries which, day and night, carry maize and soya to distant ports. That all this is happening in Piauí-the Timbuktu of Brazil, a remote, somewhat lawless area where the nearest health clinic is half a day's journey away and most people live off state welfare payments-is nothing short of miraculous.

These two farms on the frontier of Brazilian farming are microcosms of a national change with global implications. In less than 30 years Brazil has turned itself from a food importer into one of the world's great breadbaskets (see chart 1). It is the first country to have caught up with the traditional "big five" grain exporters (America, Canada, Australia, Argentina and the European Union). It is also the first tropical food-giant; the big five are all temperate producers.

The increase in Brazil's farm production has been stunning. Between 1996 and 2006 the total value of the country's crops rose from 23 billion reais (\$23 billion) to 108 billion reais, or 365%. Brazil increased its beef exports tenfold in a decade, overtaking Australia as the world's largest exporter. It has the world's largest cattle herd after India's. It is also the world's largest exporter of poultry, sugar cane and ethanol (see chart 2). Since 1990 its soyabean output has risen from barely 15m tonnes to over 60m. Brazil accounts for about a third of world soyabean exports, second only to America. In 1994 Brazil's soyabean exports were one-seventh of America's; now they are six-sevenths. Moreover, Brazil supplies a quarter of the world's soyabean trade on just 6% of the country's arable land.

No less astonishingly, Brazil has done all this without much government subsidy. According to the Organisation for Economic Co-operation and Development (OECD), state support accounted for 5.7% of total farm income in Brazil during 2005-07. That compares with 12% in America, 26% for the OECD average and 29% in the European Union. And Brazil has done it without deforesting the Amazon (though that has happened for other reasons). The great expansion of farmland has taken place 1,000km from the jungle.

How did the country manage this astonishing transformation? The answer to that matters not only to Brazil but also to the rest of the world.

An Attractive Brazilian Model

Between now and 2050 the world's population will rise from 7 billion to 9 billion. Its income is likely to rise by more than that and the total urban population will roughly double, changing diets as well as overall demand because city dwellers tend to eat more meat. The UN's Food and Agriculture Organisation (FAO) reckons grain output will have to rise by around half but meat output will have to double by 2050. This will be hard to achieve because, in the past decade, the growth in agricultural yields has stalled and water has become a greater constraint. By one estimate, only 40% of the increase in world grain output now comes from rises in yields and 60% comes from taking more land under cultivation. In the 1960s just a quarter came from more land and three-quarters came from higher yields.

So if you were asked to describe the sort of food producer that will matter most in the next 40 years, you would probably say something like this: one that has boosted output a lot and looks capable of continuing to do so; one with land and water in reserve; one able to sustain a large cattle herd (it does not necessarily have to be efficient, but capable of improvement); one that is productive without massive state subsidies; and maybe one with lots of savannah, since the biggest single agricultural failure in the world during past decades has been tropical Africa, and anything that might help Africans grow more food would be especially valuable. In other words, you would describe Brazil.

Brazil has more spare farmland than any other country (see chart 3). The FAO puts its total potential arable land at over 400m hectares; only 50m is being used. Brazilian official figures put the available land somewhat lower, at 300m hectares. Either way, it is a vast amount. On the FAO's figures, Brazil has as much spare farmland as the next two countries together (Russia and America). It is often accused of levelling the rainforest to create its farms, but hardly any of this new land lies in Amazonia; most is cerrado.

Brazil also has more water. According to the UN's World Water Assessment Report of 2009, Brazil has more than 8,000 billion cubic kilometres of renewable water each year, easily more than any other country. Brazil alone (population: 190m) has as much renewable water as the whole of Asia (population: 4 billion). And again, this is not mainly because of the Amazon. Piauí is one of the country's driest areas but still gets a third more water than America's corn belt.

Of course, having spare water and spare land is not much good if they are in different places (a problem in much of Africa). But according to BrasilAgro, Brazil has almost as much farmland with more than 975 millimetres of rain each year as the whole of Africa and more than a quarter of all such land in the world.

Since 1996 Brazilian farmers have increased the amount of land under cultivation by a third, mostly in the cerrado. That is quite different from other big farm producers, whose amount of land under the plough has either been flat or (in Europe) falling. And it has increased production by ten times that amount. But the availability of farmland is in fact only a secondary reason for the extraordinary growth in Brazilian agriculture. If you want the primary reason in three words, they are Embrapa, Embrapa, Embrapa.

More Food Without Deforestation

Embrapa is short for Empresa Brasileira de Pesquisa Agropecuária, or the Brazilian Agricultural Research Corporation. It is a public company set up in 1973, in an unusual fit of farsightedness by the country's then ruling generals. At the time the quadrupling of oil prices was making Brazil's high levels of agricultural subsidy unaffordable. Mauro Lopes, who supervised the subsidy regime, says he urged the government to give \$20 to Embrapa for every \$50 it saved by cutting subsidies. It didn't, but Embrapa did receive enough money to turn itself into the world's leading tropical-research institution. It does everything from breeding new seeds and cattle, to creating ultra-thin edible wrapping paper for foodstuffs that changes colour when the food goes off, to running a nanotechnology laboratory creating biodegradable ultra-strong fabrics and wound dressings. Its main achievement, however, has been to turn the cerrado green.

When Embrapa started, the cerrado was regarded as unfit for farming. Norman Borlaug, an American plant scientist often called the father of the Green Revolution, told the New York Times that "nobody thought these soils were ever going to be productive." They seemed too acidic and too poor in nutrients. Embrapa did four things to change that.

First, it poured industrial quantities of lime (pulverised limestone or chalk) onto the soil to reduce levels of acidity. In the late 1990s, 14m-16m tonnes of lime were being spread on Brazilian fields each year, rising to 25m tonnes in 2003 and 2004. This amounts to roughly five tonnes of lime a hectare, sometimes more. At the 20,000-hectare Cremaq farm, 5,000 hulking 30-tonne lorries have disgorged their contents on the fields in the past three years. Embrapa scientists also bred varieties of rhizobium, a bacterium that helps fix nitrogen in legumes and which works especially well in the soil of the cerrado, reducing the need for fertilisers.

So although it is true Brazil has a lot of spare farmland, it did not just have it hanging around, waiting to be ploughed. Embrapa had to create the land, in a sense, or make it fit for farming. Today the cerrado accounts for 70% of Brazil's farm



output and has become the new Midwest. "We changed the paradigm," says Silvio Crestana, a former head of Embrapa, proudly.

Second, Embrapa went to Africa and brought back a grass called brachiaria. Patient crossbreeding created a variety, called braquiarinha in Brazil, which produced 20-25 tonnes of grass feed per hectare, many times what the native cerrado grass produces and three times the yield in Africa. That meant parts of the cerrado could be turned into pasture, making possible the enormous expansion of Brazil's beef herd. Thirty years ago it took Brazil four years to raise a bull for slaughter. Now the average time is 18-20 months.

That is not the end of the story. Embrapa has recently begun experiments with genetically modifying brachiaria to produce a larger-leafed variety called braquiarão which promises even bigger increases in forage. This alone will not transform the livestock sector, which remains rather inefficient. Around one-third of improvement to livestock production comes from better breeding of the animals; one-third comes from improved resistance to disease; and only one-third from better feed. But it will clearly help.

Third, and most important, Embrapa turned soyabeans into a tropical crop. Soyabeans are native to north-east Asia (Japan, the Korean peninsular and north-east China). They are a temperate-climate crop, sensitive to temperature changes and requiring four distinct seasons. All other big soyabean producers (notably America and Argentina) have temperate climates. Brazil itself still grows soya in its temperate southern states. But by old-fashioned crossbreeding, Embrapa worked out how to make it also grow in a tropical climate, on the rolling plains of Mato Grosso state and in Goiás on the baking cerrado. More recently, Brazil has also been importing genetically modified soya seeds and is now the world's second-largest user of GM after the United States. This year Embrapa won approval for its first GM seed. Embrapa also created varieties of sova that are more tolerant than usual of acid soils (even after the vast application of lime, the cerrado is still somewhat acidic). And it speeded up the plants' growing period, cutting between eight and 12 weeks off the usual life cycle. These "short cycle" plants

have made it possible to grow two crops a year, revolutionising the operation of farms.

Farmers used to plant their main crop in September and reap in May or June. Now they can harvest in February instead, leaving enough time for a full second crop before the September planting. This means the "second" crop (once small) has become as large as the first, accounting for a lot of the increases in yields.

Such improvements are continuing. The Cremaq farm could hardly have existed until recently because soya would not grow on this hottest, most acidic of Brazilian backlands. The variety of soya now being planted there did not exist five years ago. Dr Crestana calls this "the genetic transformation of soya".

Lastly, Embrapa has pioneered and encouraged new operational farm techniques. Brazilian farmers pioneered "no-till" agriculture, in which the soil is not ploughed nor the crop harvested at ground level. Rather, it is cut high on the stalk and the remains of the plant are left to rot into a mat of organic material. Next year's crop is then planted directly into the mat, retaining more nutrients in the soil. In 1990 Brazilian farmers used no-till farming for 2.6% of their grains; today it is over 50%.

Embrapa's latest trick is something called forest, agriculture and livestock integration: the fields are used alternately for crops and livestock but threads of trees are also planted in between the fields, where cattle can forage. This, it turns out, is the best means yet devised for rescuing degraded pasture lands. Having spent years increasing production and acreage, Embrapa is now turning to ways of increasing the intensity of land use and of rotating crops and livestock so as to feed more people without cutting down the forest.



Farmers everywhere gripe all the time and Brazilians, needless to say, are no exception. Their biggest complaint concerns transport. The fields of Mato Grosso are 2,000km from the main soyabean port at Paranaguá, which cannot take the largest, most modern ships. So Brazil transports a relatively low-value commodity using the most expensive means, lorries, which are then forced to wait for ages because the docks are clogged.

Partly for that reason, Brazil is not the cheapest place in the world to grow soyabeans (Argentina is, followed by the American Midwest). But it is the cheapest place to plant the next acre. Expanding production in Argentina or America takes you into drier marginal lands which are much more expensive to farm. Expanding in Brazil, in contrast, takes you onto lands pretty much like the ones you just left.

Big is Beautiful

Like almost every large farming country, Brazil is divided between productive giant operations and inefficient hobby farms. According to Mauro and Ignez Lopes of the Fundacão Getulio Vargas, a university in Rio de Janeiro, half the country's 5m farms earn less than 10,000 reais a year and produce just 7% of total farm output; 1.6m are large commercial operations which produce 76% of output. Not all family farms are a drain on the economy: much of the poultry production is concentrated among them and they mop up a lot of rural underemployment. But the large farms are vastly more productive.

From the point of view of the rest of the world, however, these faults in Brazilian agriculture do not matter much. The bigger question for them is: can the miracle of the cerrado be exported, especially to Africa, where the good intentions of outsiders have so often shrivelled and died?

There are several reasons to think it can. Brazilian land is like Africa's: tropical and nutrient-poor. The big difference is that the cerrado gets a decent amount of rain and most of Africa's savannah does not (the exception is the swathe of southern Africa between Angola and Mozambique).

Brazil imported some of its raw material from other tropical

countries in the first place. Brachiaria grass came from Africa. The zebu that formed the basis of Brazil's nelore cattle herd came from India. In both cases Embrapa's know-how improved them dramatically. Could they be taken back and improved again? Embrapa has started to do that, though it is early days and so far it is unclear whether the technology retransfer will work.

A third reason for hope is that Embrapa has expertise which others in Africa simply do not have. It has research stations for cassava and sorghum, which are African staples. It also has experience not just in the cerrado but in more arid regions (called the sertão), in jungles and in the vast wetlands on the border with Paraguay and Bolivia. Africa also needs to make better use of similar lands. "Scientifically, it is not difficult to transfer the technology," reckons Dr Crestana. And the technology transfer is happening at a time when African economies are starting to grow and massive Chinese aid is starting to improve the continent's famously dire transport system.

Still, a word of caution is in order. Brazil's agricultural miracle did not happen through a simple technological fix. No magic bullet accounts for it-not even the tropical soyabean, which comes closest. Rather, Embrapa's was a "system approach", as its scientists call it: all the interventions worked together. Improving the soil and the new tropical soyabeans were both needed for farming the cerrado; the two together also made possible the changes in farm techniques which have boosted yields further.

Systems are much harder to export than a simple fix. "We went to the US and brought back the whole package [of cutting-edge agriculture in the 1970s]," says Dr Crestana. "That didn't work and it took us 30 years to create our own. Perhaps Africans will come to Brazil and take back the package from us. Africa is changing. Perhaps it won't take them so long. We'll see." If we see anything like what happened in Brazil itself, feeding the world in 2050 will not look like the uphill struggle it appears to be now.



GLOBAL WARMING

Yojana Sharma - SciDev.Net

FOUR DEGREE RISE 'WOULD SCUPPER AFRICAN FARMING'

A widespread farming catastrophe could hit Africa if global temperatures rose by four degrees Celsius or more, according to a study that calls for urgent planning for a much warmer future and investment in technology to avert disaster.

In most of southern Africa the growing season could shrink by as much as a fifth, according to scientists at the International Livestock Research Institute (ILRI) in Kenya, who carried out simulation studies based on existing climate change models.

The 'four degrees plus' scenario is increasingly being contemplated as negotiations, which began again in Cancún, Mexico, have stalled on measures aimed at limiting the global temperature rise to two degrees.

Drastic changes to farming will be needed under such a scenario, said Carlos Seré, director-general of ILRI.

"The general feeling is that the world is not going to move quickly enough on [confining global warming to] two degrees," he told SciDev.Net: "We are not getting traction.

"The common thinking has been that there will be enough variability in farming today to allow us to cope, but the reality is that in a four degree world the range of options is very narrow."

According to the models, the growing season may increase modestly in eastern Africa. But cropping seasons are likely to decline more quickly everywhere in the region except central Africa.

Much of southern Africa's rain-fed agriculture could fail every other season by the 2090s, says the study.

"It is not difficult to envisage a situation where the adaptive capacity and resilience of hundreds of millions of people in Sub-Saharan Africa could simply be overwhelmed by events."

Simply making crops more drought-tolerant or flood-resistant is just tinkering about the edges, said Seré.

"The changes which will be required in the farming system are quite drastic, pushing farmers beyond the limits of their knowledge and experience. They will be overwhelmed by extreme climate events," he told SciDev.Net.

"We are talking about farmers abandoning cropping and migrating out of those regions. But where are farmers who cannot cope with this level of stress in the system to go?

"Where is the alternative livelihood for 60 per cent of the continent where farming is still a very key part of coping with food security? You cannot escape the fact that for decades many people are going to be in the rural sector. It is a moral



imperative to give those people a livelihood.

"We need to understand and find much smarter ways to get knowledge out there. Extension services in Africa have largely collapsed in many countries".

The Intergovernmental Panel on Climate Change Fourth Assessment Report in 2007 assumed that regional shortfalls in food production in Sub-Saharan Africa could be plugged with imports from global markets, says the paper, but it adds that the experience of the 2008 food crisis highlighted the difficulties of such an 'adaptation' strategy.

Instead ILRI scientists are calling for better monitoring, in particular 'back to basics', land-based observation and data collection in Africa, which have been in decline for decades. Information on weather, land use, markets and crop and livestock distribution is critical for an effective response to climate change, they said.

"Africa's data-collection systems could be improved with relatively modest additional effort," the study says.



VOLUME 1 No. 5

INTHENEWS

Yojana Sharma - SciDev.Net

Snow in Zimbabwe!

No, but it certainly looks winter scene from Europe. Not snow, but hail. These pictures were taken near Norton along the Harare/Beitbridge road.



GPS Units for Wild Animals

cientists have fitted wild and domestic animals with GPS in an effort to track contact between herds of livestock and wild creatures in areas close to southern Africa's major natural parks. The device enables researchers to have precise details of the animals' movements and to pinpoint where and how they enter into contact. Using this technology, scientists have already observed that livestock often enter parks to drink from the water holes used by the wild animals and to feed from the same pastures. The aim is to understand how certain diseases in wild animals spread to domestic animals and how to limit this spread by identifying risk behaviour. The researchers are concerned that bovine tuberculosis, present in buffalos in reserves in South Africa and Zimbabwe, may contaminate herds living nearby.

The GPS tracking system has been used since 2008 as part of the Parsel project led by CIRAD and funded by the EU and the French government. Given the early results, it has been decided to extend surveillance to other regions neighbouring the Great Limpopo Transfrontier Park, especially in Mozambique.

Good Fungi

technique that introduces fungi to crop roots can make rice grow five times faster and potatoes require much Jess fertiliser, say researchers. Some fungi can cause disease in crops, but others, known as mychorrhizal fungi, have a mutually beneficial effect. The fungi extract nutrients, such as phosphate, from the soil around a plant, which the plant can then use. The fungi, in turn, receive sugars produced by the plant through photo-synthesis.

Scientists at the University of Lausanne, Switzerland, said

research has shown that the fungi can have a major impact on yield in the acidic soils of tropical regions. "There, phosphate fertiliser gets bound to the soil which makes it difficult for crops to extract it without fungal help", said biologist Ian Sanders.

The team used traditional approaches to breed fungi (Glomus intraradices) and inoculated rice with them, aiding the exchange of nutrients between the fungi and the rice roots and leading to five-fold faster rice growth, the researchers reported. Trials also showed that the same amount of potato can be grown with less than one-third of the phosphate fertiliser normally applied.



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C O N S E R V A T I O N

Wildlife in Zimbabwe Privilege of a few, well or mismanaged, or a widely indigenised asset?

imbabwe had a proud record of excellence in Wildlife Management and Nature Conservation. That no longer applies to the majority of land for Wildlife today. Some 28% of Zimbabwe's landmass is reserved for Wildlife; in itself an incredible statement how much importance the Government of Zimbabwe has given and continues to give to this National Asset. But an asset implies that it provides returns for those who own it, in this case the Zimbabwean people. If the asset of wildlife is well managed, then, the result is, this will maximise the return for the population in income and wealth creation, in job provisions and enhancing the reputation of the country, thus driven Tourism and related activities. Yet, a varied reply will have to answer the headline question.

Is Wildlife indigenised, who owns the resource? As can be seen from the pie charts below, which are based on Government information, indigenous players-the Government, Rural and District Councils, Campfire etc control 26.1% of the landmass of Zimbabwe and allow wildlife to roam on it. That translates to a staggering 93.2% of this industry in indigenous hands. Only 6.8% of the entire Wildlife landmass in Zimbabwe is in (partly) private hands of which two thirds is held by foreign investors who are overwhelmingly passionate about conservation.



National Parks control 26.1 % and Conservancies are 1.9 % of Zimbabwe.







Hence, the Wildlife industry is by far the most extensively indigenised industry within Zimbabwe. By conclusion, the huge responsibility of maintaining and conserving wildlife is not a 'privilege' of a few but rests in the hands of many.

Quality and Success of Wildlife Management: National Parks by admission of one of its former Director Generals generates about 95% of its income from auctioning hunting concessions under an often contentious tender system. National Parks should generate their income from Tourism of any kind rather than hunting but that is hardly possible today. Due to lack of management or correct allocation of resources many animal species have suffered. National Parks are said to have some 50,000 elephants too many, a specie which in over abundance destroys the habitat for many other species. Hence, wildlife management in National Parks leaves plenty to be desired. In addition, camps and roads are often in poor condition, keeping tourists away. And Zimbabweans must understand; there is plenty of excellent competition in our neighbouring countries. Hence, the need for visitors to come to Zimbabwe only exists if we make ourselves attractive to them.

But the current Director General of National Parks has an impossible task:

- Parks have little income and thus no funds to actively do what they should be doing; game counting, assessing the habitats and active game management, all of which is costly.

- Vehicles, computers, camps, roads, fences, water supply, etc. are in dire need of replacement or repair.

- Parks Investigative Unit employs good people but a few

'bad apples' have rendered the Unit untrustworthy to the rest of the industry. Therefore, active or proactive anti-poaching activities are hampered severely as evidenced by the very poor results of combating Rhino poaching.

- Offers by European countries to assist in rebuilding



Effective protection of species and... the same rhino when antipoaching is not treated as a National priority. National Parks have been made but unless Government engages on these offers, no help will be forthcoming. Unfortunately, the Government has not engaged.

QUESTION: What happened to Zimbabwe's Wildlife, the attractive National Parks, why were these assets permitted to deteriorate to their current sorry state?

Private Wildlife Management: By contrast the country is fortunate to host a private Wildlife Industry better known as Conservancies. As stated above, the private industry represents less than 7% of all Wildlife land in the country. The majority of these 6.8% is owned by foreign investors, who came to the country at the invitation of the Government. The conservancies are a model of local and foreign investors coming together with the passion for environmental development, embracing local communities directly and through Trusts, by providing employment and job training from the lowest educated upwards and with the ability to earn foreign currency income.

Whether private or investor owned or controlled by Government or Councils, the Wildlife in question makes up the total of Zimbabwe's Wildlife Herd and collectively is the National Wildlife Asset. That is a fact, unless we expect foreign investors to carry their animals back to their home country, as impossible as that may seem. Zimbabwe used to be second to no one, not even South Africa, in the field of Wildlife management. That is different today. As most of the assets and animal herds in National Parks have deteriorated, it is today the almost miniscule private sector, which guarantees the quality of Wildlife Conservation in areas, which – through their surplus of animals – now represent the breading nucleus of Wildlife in the country.

Politically forced "indigenisation": Success breeds contempt and envy. Under the disguise of "indigenisation" a group of politically allied forces in Masvingo Province (list attached) have tried massively to either force partnerships onto the private conservancies or threatened to destroy them. Laws of Zimbabwe, International Law of Cross Border Investment, Bilateral Investment Protection Treaties between Zimbabwe and other countries are ignored. Contrary to the country's policy, a former Governor relocated the poorest in the Province to these Wildlife areas, thus destroying the resident wildlife, and the job-creation it could offer by rendering the livelihood of these people unsustainable.

Wildlife is the only legal and physically possible form of land use in most of the areas in question. The land in question is unfit for agriculture or cattle ranching. It is either wildlife or nothing. Relocating humans into these region five areas is cruel and irresponsible. Wildlife left to flourish will represent one of the three largest employment sectors in Masvingo Province.

CITES and Zimbabwe's Global Reputation: Zimbabwe's reputation in the world is tarnished. Whether we agree with the reasons or not, the fact remains. This reflects on tourism figures and visitors to the country at large. The effect on the private wildlife industry has been dramatic and most owners / operators have struggled to contain their losses over the past several years. The private wildlife industry is known for high capital investments ad slow as well as low returns. Anyone without the passion for wildlife is unlikely to put his or her capital into this business. The Director General of National Parks understands and agrees with these facts.

Early in 2010, CITES (Convention on International Trade in Endangered Species) a UN body was close to condemning Zimbabwe for its poor protection of fauna and flora. The private wildlife industry was instrumental in averting a ban by CITES, an action which would have devastating effects on the entire Tourism and Hunting industry. However, the country's reputation with CITES will remain patchy unless a dramatic improvement in the protection of wildlife is re corded shortly.

SOLUTION: In view of these severe challenges, National Parks and the private wildlife sector have agreed to formulate an amended Wildlife-based Investment and Indigenisation Policy. Discussions and consultations are ongoing and a National Workshop will be held on November 15 and 16 with participation from a host of Ministries, their Ministers and Permanent Secretaries, Ambassadors of Countries who's investors are involved in wildlife, experts and academia.

The outcome should be a policy document fit to be discussed and approved by Cabinet to govern the national, rural and individual use of Wildlife in Zimbabwe. As a result 10% of Zimbabwe's GDP could again be generated on a sound

sustainable basis, with international competitiveness being restored in due course.

Recent comments in the Herald made certain allegations and claims as to Conservancies; these are dealt with below:

- "...problem lies with unrepentant rogue elements that resist change from a skewed colonial ownership structure..." Some 95% of all land within private Conservancies changed hands after Independence, holds Government's Certificates of no Present Interest, mostly have Zimbabwe Investment Centre or ZIC / ZIA approvals, and foreign ownership, some 70% is governed and protected by Bilateral Investment Protection Treaties, as well as International Law as it applies to Cross Border Investments. Hence, Conservancies today were formed with express approval of the Government after Independence and investors were actively invited ad encouraged by Government. Colonial ownership? Hardly so, unless the Governments after Independence are considered to be of Colonial nature...

- "...recently enacted law of Indigenisation, which requires that indigenous people take up 51 percent stake in any business venture, becomes handy." The law is not prescriptive and certain indigenization criteria will be negotiated suitable to each Industry. (1) The Wildlife Industry is in indigenous hands by over 93% (!) and counts as fully indigenized as confirmed by many Members of Cabinet. (2) If a further indigenization is agreed willingly by parties, due value recognizing capital invested, interest and good will must change hands; the law is explicit in this regard.

- "...indigenous people are denied access to Wildlife

investments or participation..." A maliciously wrong statement. Indigenous or other investors had the same opportunities and still do. There is not currently and has never been any discrimination against anyone since inception of the Conservancies. Government would never have allowed the formation of the latter otherwise. Several black indigenous investors participate in Conservancies as do Government bodies such as ARDA and Bikita RDC as well as other councils.

- "...as rash issuance of leases to those that cannot deploy usefulness in the sector can only spell doom for the program.": It appears that leases of a bogus nature have been issued to specific individuals of a political leaning. These 'leases' cover land in control of possession of investors and landholders who are oblivious to these actions. At a recent meeting of Permanent Secretaries and Principal Directors these 'leases' were considered illegal, ill advised and the issuing authority acting without authority.

- "...community-based conservation projects . . . suggest that communities are as good guardians of their environment..." Correct and well stated. Conservancies have active relationships with their neighbouring communities direct or through jointly administered Trusts. Political interference has made working in this fashion often impossible, as those who feel to be in power would take away the benefits from those who should be the recipients. The structures are in place, the willingness is there, the foreign investors serving as catalysts for NGO's and donor Nations getting involved are active. Good and constructive neighbourhood is good for all.



U p d a t e

From Business Day - Hopewell Radebe

UN Warns of Deadly Threat to Sheep and Goats

deadly viral disease that broke out in Tanzania earlier this year could spread to southern Africa, posing a mortal threat to more than 50-million sheep and goats.

A deadly viral disease that broke out in Tanzania earlier this year could spread to southern Africa, posing a mortal threat to more than 50-million sheep and goats in 15 countries, a United Nations (UN) agency warned earlier this week.

The Rome-based UN Food and Agriculture Organisation (FAO) said peste des petits ruminants (small ruminants' plague), or PPR, occurs in Middle Eastern countries and parts of central and south Asia. It broke out in Tanzania earlier this year, threatening a local population of more than 13,5-million goats and 3,5-million sheep.

It has since affected part of western, eastern and central Africa. But so far southern Africa has been spared. Agri SA president Johannes Möller said the industry in SA would take the FAO warning seriously and would work closely with the Department of Agriculture, Forestry and Fisheries as well as its research structures and other institutions to prevent the plague from reaching the country.

"We are definitely going to take up the matter and see how we can help the farming community protect the animals because this has potential to seriously affect the well-being of our members and the meat industry in particular," he said.

Dr Willie Unger, the agriculture department's man responsible for disease outbreaks, said the FAO notice had been sent to the government and its research institution.

"At the moment we are not too worried because SA does not import livestock or meat from Tanzania or its immediate neighbours such as Zambia and Malawi," he said.

"We believe that the chances of the disease reaching SA are remote. But in case animals are transported illegally into SA, we will remain vigilant and ready for any situation."

The FAO said it considered the plague a major threat to flocks. Although it did not infect humans, it could cause enormous socioeconomic losses.

The FAO put out the warning after a recent emergency mission to Tanzania by the agency's crisis management centre. It recommended that Tanzania should start an emergency vaccination programme around the site of the outbreak in the north of the country and consider vaccination in areas bordering Malawi, Mozambique and Zambia.

FAO mission team leader Adama Diallo said the virus in

these areas posed a risk to the Southern African Development Community as a whole and therefore "the first priority is to ensure that the virus ceases circulating there". He said keepers of sheep and goats must not move their animals until allowed to do so by the authorities as the disease was easily transmissible by direct contact between live animals in shared pastures and at live animal markets.





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BY DR. CLIVE LEVY

A Guide to Monitoring Disease Levels



ver the past two decades, Zimbabwean crops have been subjected to several major diseases, which could have severely crippled the agricultural industry if left untreated. Thankfully, joint collaboration within the research community resulted in very effective national strategies to counter diseases like grey leaf spot in maize, frog-eye leaf spot and rust in soyabeans and economically-sustainable solutions were found to control these fungi.

Whilst all three strategies relied heavily on the ultimate development of resistant cultivars, the use of fungicides were an essential interim measure. With the presence of these devastating diseases in the country, farmers have become fearful of all pathogens, and without expert knowledge to discriminate between the diseases, have treated them equally i.e. they have expected the worst of every spot and blotch. The fear of economic loss has been compounded by conflicting advice from chemical representatives, consultants and myself as to when, and how many sprays are necessary to control these diseases. One of two attitudes have been adopted – a 'wait-and-see' avoidance (the more common), and a less-practised, 'preventative' spraying of fungicides - 'just-in-case' - without regard to the presence/absence of disease.

The purpose of this article is not to debate the afore-going, but rather to provide some information on the development, assessment and monitoring of foliar disease levels. Generally, we know very little about the pathological thresholds that plant varieties can withstand before yield loss occurs in Zimbabwe, and with the chaos in the agricultural sector in the last decade, determination of these thresholds has been made virtually impossible. Chemical controls are expensive and therefore, economic thresholds are far higher than the pathological thresholds.

The farmer must be aware, however, that disease development is an interaction between three factors: (i) a pathogen, (ii) its host, and (iii) the environment. If control measures are applied, a fourth factor is introduced – (iv) the farmer. This interaction can be represented by a 'disease tetrahedron' (Fig. 1) (Zadoks & Schein, 1979).

Untreated disease increases sigmoidally with time on susceptible varieties, and/or throughout a field under an ideal environment. In layman's terms, it starts off slowly, increases rapidly, and then slows down again at a higher level of severity.

If the percentage of diseased material is plotted on a graph over a period of time, an 'S'-shaped curve results (Fig. 2a). The final disease level (x1,y1) is dependent on the time (x) and the level of initial



The disease tetrahedron (Zadoks & Schein, 1979)

infection (y), and the rate of increase. It follows that an early, high-level infection, with rapid increase (K) (Fig. 2b) will give a higher final level, than a late, low-level infection, with a slow increase (L). Pathogen presence, varietal susceptibility, crop management and the environment (temperature, relative humidity and free moisture) affect initial infection and the rate of disease increase line K passes through the pathological threshold at time t1 and yield loss commences thereafter. The



Left: Increase of disease with time. (x, y: initial infection level; x1, y1: final infection level). Right: Two types of disease increase with time. An early, high-level infection with rapid increase (K) passes through the pathological threshold (P) at time t1 and the economic threshold (E) at time t2. A late, low-level infection, with slow increase (L) passes through neither threshold.

level of disease only passes through the economic threshold much later at time t2. Only after the time t2, would financial losses be experienced. Line L passes through neither threshold, and therefore, no yield loss occurs even though symptoms are noticeable on the crop. Chemical and other controls aim to drop the final disease level (x1,y1) below the economic threshold, by either reducing the initial infection level (Fig. 3a), delaying the disease development (Fig. 3b), decreasing the infection rate (Fig. 3c), or achieving a combination of these effects. Therefore, no economic benefit would be derived from controlling the infection of Line L (Fig. 2b), and time, money and chemical would be wasted.

Theoretically, this sounds fine, but what about in practice? How does a farmer know if he has an aggressive pathogen in his crop, which will follow line K, or a slowly increasing disease of no concern (line L, Fig. 2b)? Generally, he doesn't! Therefore, it is essential that the pathogen is correctly identified by a competent pathologist when the disease is at low severity. Once armed with this information, the farmer must then monitor the level of disease in his crop by regular scouting.

Accurate disease levels in a field cannot be found by looking for symptoms on a few plants at the side of a field. The approximate disease level in a field can be easily obtained by sampling 100-200 plants at random in a 'stepped-traverse'. Plants are taken out of the field, laid out, and the percentages of leaf damage noted. The average infection of ALL plants will approximate to the severity level at that time. Scouting should commence when symptoms are first seen and repeated on a weekly-basis until crop maturity. Generally, a "new" disease will not devastate a field in the first season that it occurs in a field (with the exception of, possibly, soyabean rust), and thus, with experience, the farmer will know when to apply control measures.

Reference:





Control of disease increase (K: rapid infection; M: crop maturity; E: economic threshold. data transformed logistically). Fig 3a - by the reduction of initial infection, Fig 3a - by the delay of disease onset, and Fig 3a - by the reduction in rate of increase.



HOLISTIC LAND MANAGEMENT

FROM NEW AGRICULTURALIST

Reversing Desertification with Livestock in Zimbabwe



ccording to the UN, 12 million hectares of land - an area the size of Benin - are lost globally to desertification every year. "Continued land degradation is a threat to food security, leading to starvation among the most acutely affected communities and robbing the world of productive land," UN Secretary General Ban Ki-moon said at the launch of a decade-long effort to tackle desertification in August 2010. Meanwhile, an approach using livestock and specific grazing regimes has seen desertification reversed on over 2,500 hectares of degraded land, in Zimbabwe.

Overgrazing is often seen as a major cause of desertification. But by changing the way animals are managed, the Savory Institute (SI) and Africa Center for Holistic Management (ACHM) have restored 2,700 hectares of degraded land close to Victoria Falls by increasing livestock numbers by 400 per cent. Having increased land productivity, water availability and improved livelihoods, the approach is now being adopted by local communities and pastoralists in Namibia, Zambia, Kenya and Ethiopia.

A Source of Hope

The grazing approach*, an example of 'holistic management', mimics the natural movements of large herds of wild grazing animals. Livestock are grazed in one area for a maximum of three days, and are not returned for at least nine months. "Overgrazing is a function of time and not of animal numbers," explains Allan Savory, ACHM founder, former wildlife biologist, farmer and consultant. "Whether there is one cow or a thousand does not alter the fact of overgrazing but merely changes the number of plants overgrazed if the animals remain too long in the same place."

Moving across the land in large numbers, the animals break the soil crust with their hooves, trample litter to provide soil cover, and fertilise the soil with nutrient-rich dung and urine. This increases plant growth and improves soil quality. "What we are demonstrating is that we can return to formerly animalmaintained grasslands and savannahs to keep grasslands and their soils alive without burning billions of hectares annually to remove old dead grass in an attempt to keep such grasslands



After three years of holistic grazing grass cover has dramatically increased.



Livestock are grazed in one area for a maximum of three days.



Farmers are using livestock to improve their crop yields.



ACHM has attracted pastoralists from all over Africa to learn more about the management techniques.

healthy," explains Savory. "The effects are impressive," Savory enthuses. "We can barely keep pace with grass growth, even in dry years." Increased organic matter and improved soil structure also increase water infiltration and retention within the soil. "The river, which was dry most years, is now flowing again in all but the driest years," Savory observes. "We have water in pools with water lilies and fish through the dry season a kilometre above where they have been known before."

Spreading the word

Communities must work together and stick to the planned grazing regimes if the approach is to work, however. Mobilising whole communities has proved difficult in the past but, with funding from USAID, ACHM has been able to increase the capacity and skills of their staff. Target communities have now been selected to begin practising holistic management and the results, so far, are encouraging. "Even in one season, and doing the grazing badly, communities still got approximately four times the yield of grass," Savory explains.

Communities are also being taught how to use livestock to improve their crop yields. "Instead of transporting manure from the cow to the field, we encourage communities to bring their livestock together in the field for several nights before the crops are planted," explains Huggins Matanga, director of ACHM. Without ploughing, or any soil preparation, the farmers' yields are increasing by three-to-five times. "The difference is astronomical," says Matanga.

Designed as a learning site to demonstrate the impact of holistic management, ACHM's success has attracted governments, NGOs and pastoralists from all over Africa to learn more about the management techniques. Visiting pastoralists from northern Kenya have stated that holistic management is the only hope they see to saving their culture, livestock and livilihoods. Consequently, concerned Kenyans are now collaborating with SI and ACHM to establish a similar learning site to service the Horn of Africa.

A Brown Revolution

Soil degradation and burning grasslands release large amounts of carbon into the atmosphere, contributing greatly to climate change. "Without reversing desertification, climate change cannot be adequately addressed," Savory explains. "Livestock are vilified, but they are the only practical and readily available tool with which to reverse the degradation of the world's rangelands to address this aspect of global climate change."

Increasing soil organic matter by a mere 0.5 per cent on the 5 billion hectares of rangelands worldwide would sequester approximately 720 gigatonnes of carbon from the atmosphere, Savory states. In 2000, the total emissions globally were an estimated 44 gigatonnes. "Yet achieving an increase of two per cent organic matter would be reasonably easy if rangelands are managed holistically," he adds.

By storing large amounts of carbon, Savory believes that healthy soils offer the best hope of tackling climate change. "Biodiversity loss, climate change and desertification are the same issue," he says. "Anyone can grow more green plants using modern technology, genetic engineering and fertilizers, but this ignores the fact that the world is losing an estimated four tons of eroding soil each year per person alive today. We need a 'brown revolution' that focuses on restoring healthy soils throughout crop and rangeland agriculture on which to both grow food and stabilise the climate. We have all the money in the world but we do not enjoy the luxury of time!"



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TAIL PIECE

BY MR C RACKED

Breaking Eggs

s for that chicken-and-egg question, which came first? It's chicken, obviously. In Genesis, God created "every winged fowl after its kind" and then eggs them on with the commandment to "be fruitful and multiply." The hen fruit came second.

But this is not something you want to share with eggheads or your lacto-ovo-vegetarian friends. That would be like teaching your grandmother to suck eggs.

Of course, one must be careful not to put all of one's eggs in one basket like Aesop's clumsy eggmaid. You don't want to kill the goose that laid the golden egg. I like to put my butter-andegg money, the loose change from many failed adventures, in a secure nest egg where it will encourage hens to lay more.

The alternative is to put all your eggs in one basket, as Mark Twain suggested, "and watch that basket!"

You may think you're one of those hard-boiled types, but don't go flying around in any eggbeaters, even if the pilot does have scrambled eggs on his cap. I don't want to see your hopes and dreams shatter like an eggshell. Would you like us to wreck a pair, or do you prefer to coddle your eggs? You could have Adam and Eve on a Raft, a hobo egg, Scotch woodcock, or deviled eggs ("hot as the Devil's hell"). Personally, I prefer fish eggs with a tall, cool egg cream or maybe an eggnog.

What do you want, egg in your beer? Depend on that and your love will be a duck's egg, I guarantee.

"Go fry an egg," you say?

Well, look, you can't make an omelette without breaking eggs, nor can you unscramble an omelette. As Lady Macbeth said, "What's done cannot be undone."

It's like the curate's egg, there's some good and some bad to this story. The good egg always has his sunny-side up. Obviously I've been egged on and encouraged to write this by the rotten egg.

I see now that I've got egg on my face. I've laid an egg, failed miserably, and scored a goose egg.

If you break an egg, make an omelette, and that's what I'm about here. I'll just eat my words, or maybe just go suck an egg.



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The Discounters Club of Zimbabwe has been established in conjunction with the Commercial Farmers Union and had its official opening on the 30 November 2010. Its focus is to boost Zimbabwe's businesses through free advertising for the companies that have joined and will be joining in the future by providing a discount mechanism to the general public of Zimbabwe.

All companies that join will pass on a discount to any customer using a valid Discounters Club Card. The Discounters Club Card will have the name of the member, ID number and a card number for verification purposes. Signage indicating participation will be given to each member of the Discounters Club who offers discounts to card holders.

The Discounters Club has a wide range of companies (with more coming into the fold) offering discounted prices on their products and services to the discount card members. There are a wide range of companies ranging from: Retail; Spares & Hardware; Manufacturing; Gyms; Restaurants; Hair & Beauty Salons; Catering; Groceries; and many others.

The advantages to the companies that come onboard are: Guaranteed and regular free advertising through the AgriZim Magazine, in the yellow pages which goes out to 600 members at present and expanding, advertising through the CFU Classifieds with an email address list of over 4000 and growing and a broader customer base as word of the discounters club circulates. We are setting up a new Zim Discount Club Website which will reach many more people. Regular newsletters will keep the participating companies briefed as to the clubs growth. Companies can advertise this through their own websites if they so wish.

To the public who wish to become members, you will need to register through the CFU Office. Once you have registered, it will take 4 - 5 days to process the Discounters Club Card. The cost to the member is \$60.00 for 6mths or \$100 for the year. The potential saving to you is huge through the various discounts on offer, yet the potential to the companies are greater through a bigger, broader customer base.

If you are a BUSINESS or a CUSTOMER and are interested, join the club today. Don't miss this opportunity as we would love to welcome you on board. We look forward to your support.

Sign up today or contact: Hendrik: 0772 235 640 June: 0773 434 925 Rich: 0772 311 704 Email: discountersclub@cfuzim.org / dir@cfuzim.org



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