



The Commercial Farmers Union of Zimbabwe

AgriZim

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 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

AgriZim

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FOREWORD

MESSAGE FROM THE PRESIDENT

Congress consisted of two days at Meikles Hotel in August 2010. A closed session on day one (3rd), and an open session on day two (4th).

During the closed session 130 members deliberated reports of the activities undertaken over the past year by the various departments within the CFU. This included reports from crops, livestock, the legal department, ARAC, Labour, AISD, Finances, the CFU Policy Document and Constitution, the South African initiative and the Recovery and Compensation initiative, as well as tabled reports from the Regions. We were also pleased to distribute our first copy of our new farming magazine AgriZim to everyone at Congress.

CFU are currently working on restructuring the Union so as to be able to serve members to best effect.

Deputy Prime Minister Khupe addressed the closed session, acknowledging the challenges they were facing as government, but reassuring farmers of their commitment to resolve outstanding issues of the GPA and moving forward to restore property rights and the rule of law.

In ending we discussed the Way Forward, and it was agreed that an EGM would be held in November to finalise the policy Document, and look at changes to the Constitution.

The first day ended with a cocktail function where two Farming Oscars were awarded. The first going to EU Ambassador Xavier Marchal, and the second to Mike Campbell.

During the open session on day two John Robertson covered the economic situation in Zimbabwe comprehensively, Dr Theo de Jager (Vice President



of AgriSA) gave a rivetting account of Land Reform in Africa, while Graham Mullet covered the work done by Valcon in identifying and valuating farms throughout Zimbabwe. The Congress ended with addresses by visiting Agricultural Unions.

CFU are currently working on restructuring the Union so as to be able to serve members to best effect. The summer cropping season is upon us and we need to ensure that affordable finance is available to our members, as well as all the necessary inputs.

Deon Theron
President
CFU

A handwritten signature in black ink, appearing to read 'Deon Theron'. The signature is stylized with overlapping loops and a long horizontal stroke extending to the right.

The Zimbabwe I Want

The original article was produced by Professor Mandivamba Rukuni. This edited version is re-produced by Maxwell Mutema with his permission.

“Africa has been declining over the past 50 years over every area – politics, economics, environment, socially. What has happened that we are declining in all of these areas?” - Professor Mandivamba Rukuni

He attributed most of Africa's current multitudes of problems to the breakdown of the traditional, social and cultural fabric of African communities.

“Today we are stuck in the colonial paradigm. My issue with the colonial legacy is not anger or hatred. There is no problem with history. I don't intend or even desire to reverse history or to disown it. If we did not have the Europeans colonise us, someone else would have colonised us, something else would have happened. So history is history, let it go. My issue is with creating new history.”

He reckons one way to address this multi-faceted decline is a developmental and economic model embedded in Africa's culture, norms and values coupled with modernisation without necessarily resorting to westernisation.

He describes the Zimbabwe he wants to see and, I guess the one many of us also want to see, in four parts as follows:

Culturally, we need to return to the culture of hard work, saving and investment, collective responsibility, a belief in education and an enlightened society and a love for peace.

When it comes to land, he wants to see a land policy that transforms how we relate to land, a Zimbabwe where there is abundant and affordable food, and where each family has a home. He further points to the fact that 70% of the population is rural. We can't wait for the 30% of the population which is urban to be middle class before we have serious engagement with government. He wants to see a highly decentralised (land administration) system where land issues are dealt with right where the land is, not in Harare and Bulawayo.

In terms of politics and governance he wants a Constitution which is very clear about what conduct political parties must observe.

Finally in terms of technology, *“I want a Zimbabwe where it is low cost, energy efficient and with more solar and wind.”*

His definition of national success: being able to acquire new things we need as a nation whilst keeping the things we already have.

Getting Agriculture Moving Again

How do we get agriculture moving again? The six prime

movers of agriculture drove it in the past, and will have to drive it again. These are: title deeds and resources to develop the land so that it is productive, human resources (farmers, managers, researchers, etc), physical and biological infrastructure (roads, feeder roads, dams, genetic resources), technology through research, effective farmers' institutions, and a conducive policy environment.

It doesn't matter whether you're pushing for large scale agriculture or small scale agriculture, it still takes a long time of good investment by government to be able to make it succeed.

The Minister of Lands and the President have recently said they think we are ready to do a land audit. He knows from the political perspective it's not that straightforward. But as a technician, he laments that for the land audit to be strategic, it needs to be more than a registry of who is where and who owns what. The problem with that is that it doesn't allow you to figure out what to do next. So you almost want to deal with the land policy issues at the time that you're dealing with the physical land audit. The land audit should deal with the land policy issues – tenure, administration, compensation, development, productivity, the environment and sustainability – at the same time as the audit.

The land audit should not be an event. It should be the means of creating a system that will catch the culprits down the road. Politically, the ideal would be to catch all culprits today. But you need to ask how do you build a system which tenure wise, administratively, will continuously catch the culprits and rotate them until you have a brilliant, productive agriculture sector which transforms our society to where we want to go.

In terms of land tenure, let us focus on tenure security and enforcement. Without that, no tenure is secure in Zimbabwe. Let's hear how, when someone gets a piece of land with a certain tenure, that is going to be secured. That includes communal areas. The biggest sin that happened in Zimbabwe was after independence, in continuing with the assumption that communal land is state land. Because the moment it becomes state land, arable land and residential land is secure, but the communal land is open access land. That means anybody can walk in and build a house. Traditionally, you couldn't do that; the community had rights over that land. Today it's the government. But where is the government? -in the cities. So how do they stop someone from building a house there? It deteriorates from community land to open access land. That's where the state has a problem.

“We need to take land further so that we are able to move it

beyond the idea that party politics has to centre around land. If we don't move beyond that point we will be in trouble for much longer."

Prof Rukuni berates adoption of development models by African governments premised on education systems which do not inculcate self-drive mindset, confidence, sense of identity, entrepreneurship and zeal: "When I say there is something evil about formal education, it is something about thinking that there is always one answer to everything. The confidence that you build as a youngster, up to the age of five, and you start going to school and you fail grade one – then you easily end up gone in life. The system says you have failed, you will never succeed. The system also says there is only one answer to the problem, there is always one right answer, and you have to find it. The inability to live with ambiguity, with things which can be

debatable, in which there is not one right answer, is a problem. How do we build a society which is capable of tolerating ambiguity (different views)?" cfu

ABOUT THE AUTHOR

Maxwell Mutema is a land and property consultant. He holds an MBA in Real Estate and a PhD in Land Management, both from The University of Reading in the UK. In addition he has a Master in Business Administration in Agriculture and the Food Industries from The Royal Agricultural College, Cirencester (UK). His first degree is a BSc Agriculture Honours Degree from the University of Zimbabwe plus a Diploma in Agriculture from Chibero College of Agriculture.

UPDATE

GLOBAL ECONOMIC RECOVERY

Article from Food Outlook Global Market Analysis by the FAO, June 2010

Concerns over macroeconomic prospects and global financial markets are once more gaining the headlines. Changes in the economic environment, including continuing fluctuations in exchange rates and high unpredictability have a strong influence on agricultural commodity markets. From the supply side, however, the 2008-2009 price boom spurred plantings and production of many food crops, resulting in a recovery in inventories and boosting stocks-to-use ratios, a tendency likely to prevail also in 2010/11. In fact, from sugar to wheat, most indicators point to increasing world supplies, a leading factor behind the sharp declines in international prices of major food staples this year.

The FAO food price index, which tracks agricultural commodities, fell to a three month low in March and as of May has changed little. Sugar prices have tumbled by half from their peak at the beginning of the year under prospects of significant production increases. The decline in cereal prices has been more modest, at around 10 percent. The drop in cereal prices is a concern to producers and is exerting more pressure on governments to intervene. In the oilseeds complex, prices have so far resisted a major downturn, as demand remains strong and supply somewhat less ample than in the case of cereals. However, early indications suggest that prices in the sector may weaken in the coming months as supply responses to high prices ease the current tightness.

By contrast, dairy markets remain firm, amid sluggish growth in milk production and robust demand. Prices in the meat sector have also been on the rise because of declining production just as world demand rebounds. The fish sector is also benefiting from a revival, with prices of some species strengthening.

As markets enter the second half of 2010, the focus is shifting gradually to prospects over the next year. Traditionally, the

outlook for cereals attracts particular attention at this time as information on plantings for the new season is firmer than the other crops. Based on FAO's first forecast of global supply and demand in 2010/11, presented in this report, cereal markets are heading towards another comfortable season, with world production in 2010 likely, at least, to match the record achieved in 2008 and global inventories increasing in the third consecutive season. Importantly, the growth in production may not be confined to exporters only, as many importing countries are also expected to harvest bumper crops. Nonetheless, the total value of food imports in 2010 is forecast to increase by 11 percent with greater sugar and dairy import bills offsetting lower expenditure on cereal imports. The import bill of the Least Developed Countries (LCD's) as a group, in 2010 is forecast to rise by nearly 10 percent, with non cereal commodities accounting for all of the anticipated increase. cfu

OVERHEARD



Two men were fishing on the Zambezi river having a quiet beer. Very quietly, so as not to scare the fish, Joe said: "I'm thinking of divorcing my wife. She hasn't spoken to me for two months." Dan answered thoughtfully: Joe you need to think about this very very carefully as one does not find a wife like that easily."

Chicken Litter Has Advantages Over Conventional Fertilizers

Chicken litter is much more valuable as a fertilizer than previously thought, according to an Agricultural Research Service (ARS) study showing its newfound advantages over conventional fertilizers.

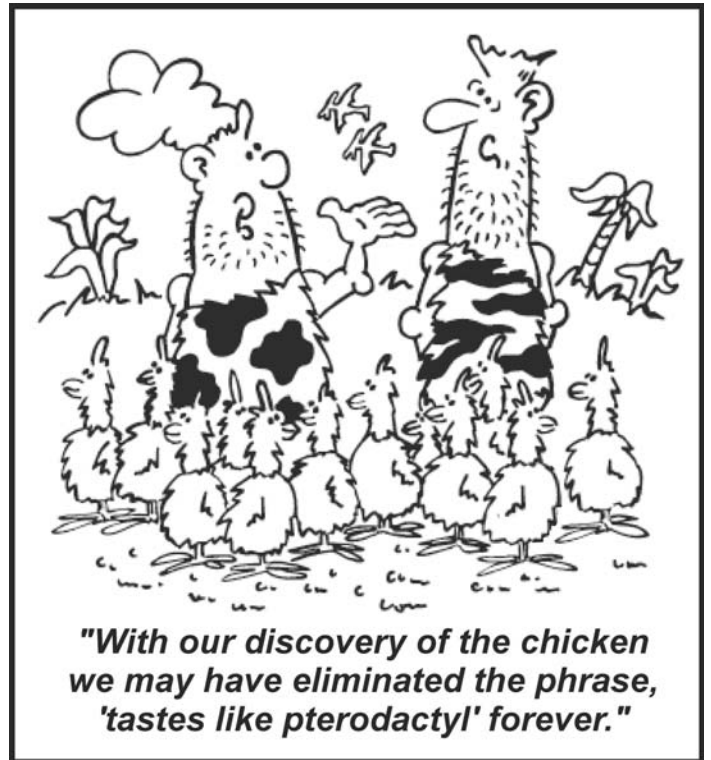
Litter is a mixture of chicken manure and sawdust or other bedding material. Some cotton farmers in the Mississippi area are switching to chicken litter and away from standard inorganic, synthetic fertilizers. Many other farmers are interested in the possible economic benefits of using chicken litter, but are reluctant to switch without the numbers to back up their decision.

Now a study by ARS agronomist Haile Tewelde at the agency's Genetics and Precision Agriculture Research Unit (GPARU) at Mississippi State, Miss., and cooperators has provided those numbers. Tewelde did the research with GPARU soil scientist Ardeshir Adeli, two Mississippi State University colleagues, and Karamat Sistani, research leader at the ARS Animal Waste Management Research Unit in Bowling Green, Ky.

Previous studies only considered the economic value of the nitrogen, phosphorus and potassium in chicken litter, compared to that in synthetic fertilizers. Farmers know that chicken litter, an organic fertilizer, is a better soil conditioner than synthetic fertilizers, but have never had a way to assign a number to the value of that benefit.

In their study, Tewelde and colleagues figured the litter's value as a soil conditioner as an extra \$17 per ton of litter. They calculated this by balancing the price tag of the nutrients in litter with its resulting higher yields, a reflection of its soil conditioning benefits.

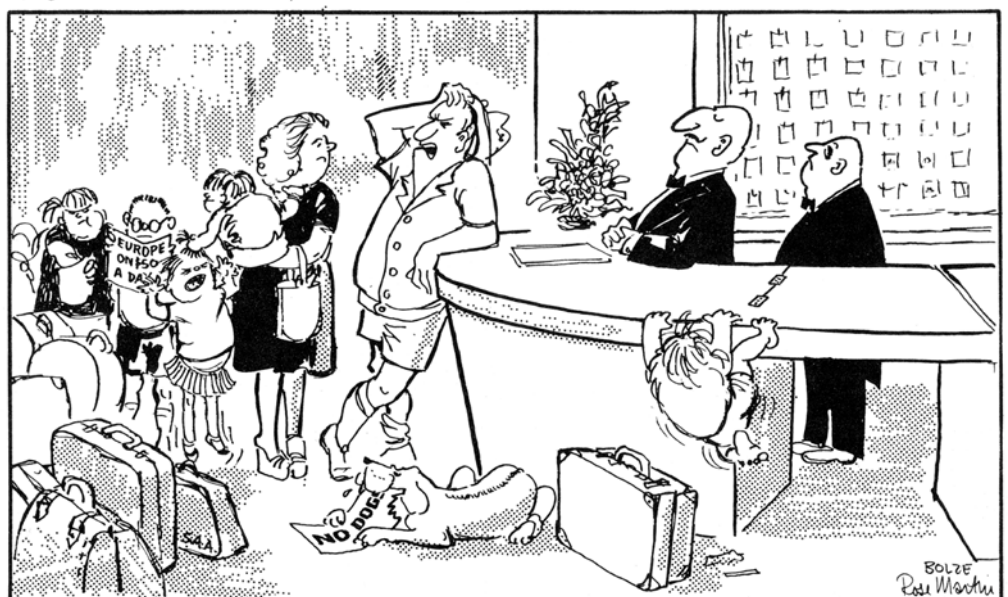
They found that cotton yields peaked 12 percent higher with organic fertilizers, compared to peak yields with synthetic fertilizers. With all benefits factored in, they found that chicken litter has a value of about \$78 a ton, compared to \$61 a ton when figured by the traditional method.



The economic analyses also showed that farmers could further increase their profits by using less of either fertilizer than currently used for maximum yields - which is also good news for the environment. *cfu*

Whenwes

Adapted from the cartoons of Louis Bolze and Rose Martin



"What? Per bed and breakfast! Eeish, back in Zim we paid that for the whole family at the Lion and Elephant."

Conservation Agriculture Union Project

Improving livelihoods of smallholder communal farmers with the Conservation Agriculture (CA) Union Project

(FAO in cooperation with ZFU, ZCFU & CFU)

Characteristics of Communal Agriculture

Agriculture in many of Zimbabwe's communal areas is characterised by low productivity resulting in low incomes and frequent food insecurity. The causes of the low productivity include farm and land management constraints (e.g. timeliness of operations and attention to detail), subsistence farming systems, and low level of input application.

Annual ploughing and mono-cropping have caused the soils to become infertile due to poor physical and chemical properties.

- Annual ploughing results in the oxidation and removal of organic matter which is critical for promoting good soil structure and water holding capacity

- Ploughed lands are also much more exposed to erosion and loss of fertile top soil.

- Mono-cropping results in lower yields due to nutrient imbalances and a build up of pests and diseases.

Farmers rarely apply lime to their soils, which have become acidic in many areas reducing nutrition uptake significantly.



The CA Union Project

This all paints a very gloomy picture of communal agriculture. However, it is important to recognise that there are also positive aspects. The values presented in Figure 1 are average figures – they disguise the fact that there are many individual farmers who achieve very good yields. Also, the communal sector is of great importance to the national economy being responsible for over 66% and 98% of the nation's maize and cotton production, respectively.

In 2004 the Food and Agricultural Organisation of the United Nations (FAO) and the nation's three farmer's Unions (Zimbabwe Farmer's Union, Commercial Farmer's Union and Zimbabwe Commercial Farmer's Union) initiated the 'CA Union Project'. The aim of the program is to utilise existing farming expertise through the unions to support communal farmers in Zimbabwe. Other stakeholders, besides the farmers, Unions and FAO, include the Ministry of Agriculture (including Agritex), project consultants, project extension officers and local government.

Project Approach

The CA Union project is combining local farming expertise through farmers unions and market linkage arrangements to enhance small-holder farming systems. The main thrusts of the program are strong extension, improved land and farm management, input support, contract growing arrangements and community capacity building.

The project objectives are to:

- Increase food security through intensive extension, training and input support
- Introduce improved land use and land management farming methods including Conservation Agriculture (CA), soil and

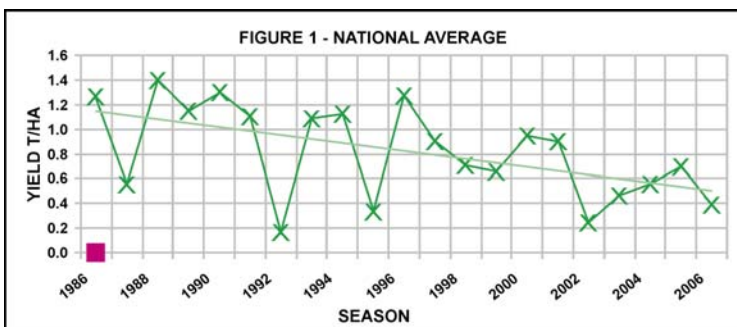


Figure 1. National average communal maize yield, 1986-2006 (Source: ARES, CSO, CFU)

Yields are further reduced because farmers are unable to plant at the correct times due to tillage constraints and input shortages.

There is often a tendency amongst communal farmers to make up for low yields by cropping larger areas than can be handled with the available labour and input resources. This practice further reduces yield potentials, because farmers are not able to keep management standards high. For example, farmers tend to neglect plant populations, weed control and correct fertilizer application. All these factors contribute to communal agriculture being largely subsistence based. **Figure 1** shows how national communal maize yields have been declining: in 1986 the national average was 1,100 kg/ha whilst in 2006 it was only 500 kg/ha.

water conservation, crop diversification, integrated pest management and crop rotations.

- Establish market linkages with private sector and enable farmers to produce and market a variety of crops profitably.

The Union Project seeks to improve productivity by addressing all the constraints faced by the small-scale producer. If asked for the reasons for low productivity, communal farmers will usually first mention the availability and price of inputs – however, as pointed out at the beginning of this article, input application to crops is not the only reason for low crop yields.

The programme seeks to turn around productivity by first addressing the farming system used by farmers. Therefore, harmful practices such as 'slash, burn and plough' and mono-cropping are replaced by CA.

Some of the specific practices encouraged by the conservation approach include:

- Encouraging practices that promote the recycling of organic material including the

- discontinuation of burning of residues

- introduction of controlled grazing

- replacement of ploughing with reduced tillage practices e.g. ripping

- Establishment of correctly spaced permanent planting basins before the rains

- Early planting of crops at the correct plant spacing

- Regular and early weeding of all crops

- Appropriate use of lime, fertiliser (or manure) and crop chemicals

- Crop rotation with a minimum of 30% legumes in the system

Minimum tillage describes the practice of farming in a manner that minimises disturbance of the soil. It therefore excludes ploughing. This is beneficial for a number of reasons: Firstly, as mentioned, ploughing reduces long-term soil fertility. Secondly, ploughing often results in delayed sowing because many farmers do not have first-hand access to draft power.



Figure 2. The effect of planting date on the growth of maize.

This series of photos was taken on 9 February 2007 and illustrates the typical demonstrations that can be seen at Union Project demonstration sites.

These farmers may have to wait until Mid-December or even January before they are able to prepare their lands.

Crop rotations are important for maintaining and improving the health of the soil and farmers in the programme typically rotate maize (for food security), legume and cash crops.

Besides looking at the farming system, farmers are also trained on good agricultural practices. Therefore, great importance is placed on attention to detail and timeliness of operations. For example, farmers are taught a method of sowing that ensures that they achieve the correct plant populations. Practices such as liming, cultivation, fertilization and harvesting are all done at the right time.

Project Implementation

The programme places resident extension officers at each project site who oversee production by approximately fifty farmers. Each farmer is asked to put aside a total of 1.0 ha for the programme. This area usually represents a small part of the total landholding of each farmer which is important for two reasons. Firstly, many farmers have not used minimum tillage in the past and would be reluctant to risk a large part of their plots to an untested system. Also, minimum tillage requires more labour than conventional methods and a large area in the first year would discourage farmers.

Extension officers report to farming consultants who each oversee a number of sites. The project makes extensive use of 'demonstration plots' which are used to

- Demonstrate farming practices that farmers will shortly undertake in their own fields

- Give farmers a visual demonstration on the effect of different practices, e.g. planting date (Figure 2) or rates of fertilizer application

Farmers are encouraged to work in small groups of ten to fifteen individuals to accomplish certain activities, for example, planting and fertilization. Group work has been shown to have a number of advantages including

- Building a sense of common purpose between farmers

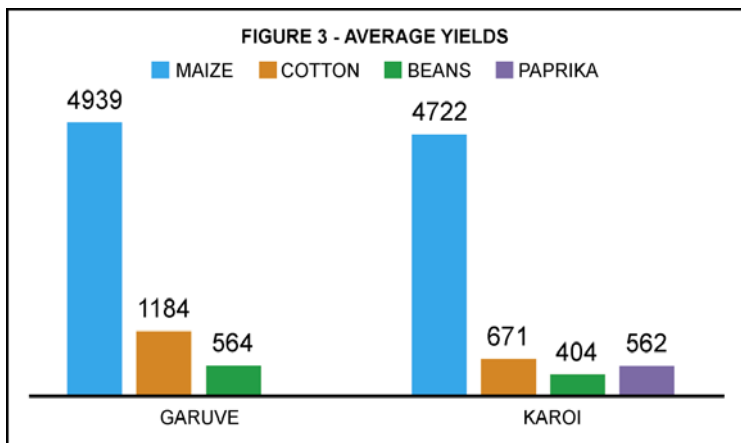
- Ensuring that each farmer's plot is prepared to the same standard of management

- Reducing input diversion. This practice occurs when farmers divert inputs from their intended purpose. It has been shown that input diversion is less likely to occur when farmers work in groups.

In addition to the extension and technical backup, farmers are provided with sufficient input support to achieve commercially viable yields including lime, seed, fertilizer and crop chemicals.

Results

Figure 3 shows yields attained by farmers at the two sites where the programme was implemented in the 2006/07 season. The programme supported 50 and 100 farmers at Guruve and Karoi sites, respectively. Whilst the maize yields is significantly higher than the national average shown in Figure 1, the cotton, bean and paprika yields are not so impressive. Maize was planted with the first November rains, however there were delays in planting the other crops which were affected by poorly distributed and low rainfall.



Average yields (kg/ha) achieved by farmers at Union Project sites, 2006/07 season.

The maize yields give an indication of the potential productivity of the communal sector. Farmers achieving these yields would be food secure and have surplus maize to sell resulting in improved livelihoods. Similar increases occurring in the other rotated crops would make communal farmers an attractive proposition for commercial agricultural processing and marketing companies.

Contract Farming

The long term goal of the programme is to set up partnerships between companies and farmer groups. For contract farming to be successful farmers must achieve viable yields of acceptable quality produce. There should also be enough farmers producing

a sufficient volume of produce to make the project viable for the company. In past years Cottrade and Capsicum have contracted farmers to grow cotton and paprika, respectively. In the current season Cargill, Cottco, Origen, Chemco Seed, Quton and Sunspun have been added to this list and are contracting farmers to grow a variety of crops including cotton, sugar beans, cotton seed, Michigan pea beans and bananas. Union Project sites are located in Mashonaland Central (Guruve), Mashonaland East (Chinamhora and Mutoko), Mashonaland West (Hurungwe), Midlands (Kwe Kwe) and Manicaland (Mutasa).

Although the Unions are confident that yields can be improved, there are also other areas where farmers require training including group organisation, record keeping and business skills. Included under the topic of business skills is training on contract agreements. It is also important that farmers guarantee that no input diversion or side-marketing will occur.

This article started out by describing some of the challenges facing the communal sector. It is for many of these reasons that companies have traditionally viewed the communal sector as being a high risk. Some companies might consider working with these farmers if the risk were reduced. The CA Union Project provides each company participating in the programme with extension support for three years to ensure that farmers receive the training required to maximise productivity with the supplied inputs. Companies are therefore given a low risk entry point into the communal sector. After three years the company assumes complete responsibility for the site. *cfu*

ARAC

(AGRICULTURAL RECOVERY AND COMPENSATION)

Committed to the restoration of confidence, trust, security and dignity for our members through:

- The recognition of our rights as citizens and investors,
- The principle of equivalence in the process of compensation for compulsory acquisition,
- The re-engagement of our skills and investment in a non discriminatory environment,
- Recognition and extension of Property Rights and security of tenure to all farmers.

We are actively working:

- To alleviate the situation of our poor elderly through ZEST (Zimbabwe Elderly Support Trust),
- To re-establish direct contact with all former CFU members and build a strong, unified and well informed membership,
 - Compiling business and consultant data bases,
- Looking out for projects and opportunities that can engage members skills constructively,
 - Advising members on compensation claims.

**Contact Shayne or Ben: arac@cfuzim.org
Tel +263 (0)4 309800 - 19, ext 249.**

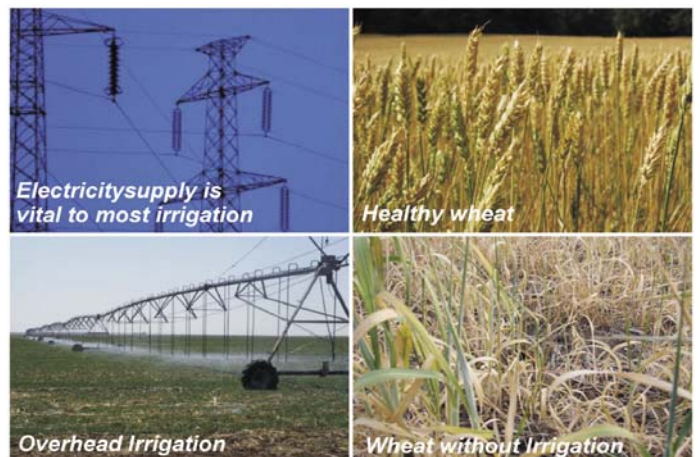
“Winter Wheat” Current Challenges to Viability in Zimbabwe



Wheat is estimated to have been first introduced into Zimbabwe by colonial settlers in the last decade of the 19th century, but large scale commercial production was to only gain notoriety prominence as late as the 1960s. The commodity has traditionally fitted in well with most commercial cropping programmes being grown as an alternate winter crop with the optimal time for planting being late April to early May. The fact that the crop is grown during Zimbabwe's dry season means that a regimented irrigation plan is essential for success. This of course requires readily available water resources and electricity supply for pumping. Average large scale commercial farm yields for wheat noted in Zimbabwe have ranged from 5.0 tonnes per hectare to 10.0 tonnes per hectare depending on factors such as altitude, soil type and optimal management of the crop.

Zimbabwe has always been a net importer of wheat. The country's total requirement has traditionally been in the region of 350,000 to 400,000 tonnes per year. In the past local production has contributed significantly to reducing imports required to meet the deficit in demand. However, since the year 2001 the national yield has fallen dramatically. The chart below illustrates this downward trend:

This year, the planted hectareage under wheat is down yet again. This is in spite of the new found relative financial stability brought about by the “US dollarization” of the country's



Wheat Production in Zimbabwe 1994 – 2009 (Source: Commercial Farmers' Union of Zimbabwe).

economy in February 2009. Preliminary indications for 2010's winter cropping season suggest that there are approximately 5,000 hectares under wheat down from about 10,000 hectares last year. The forecasted total production for 2010 is 11,300 tonnes leaving a conservatively estimated deficit of 380,000 tonnes which must be imported. Moreover, indications suggest that in the recent past the average yield per hectare has fallen dramatically. The decline in production of this commodity is seemingly unnecessary and the question has to be asked: what is going wrong?

The problems bedevilling the wheat growing industry in Zimbabwe are complex but those affecting the crop this year can be summarised in no particular order as follows:

1) Working Capital Shortage

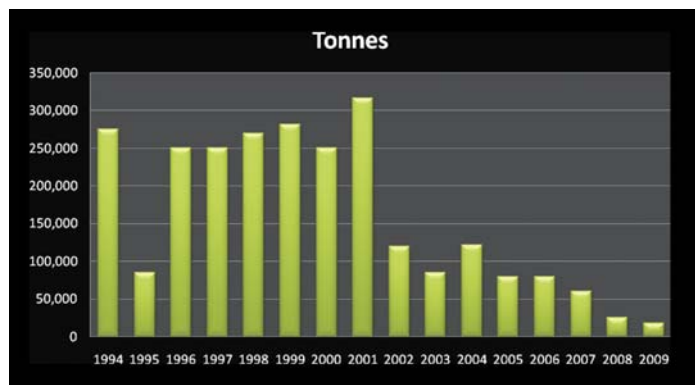
Perhaps the main reason for this in Zimbabwe is the lack of security of tenure, and the consequent inability to harness land collateral values has hamstrung farmers who cannot obtain sufficient working capital from private financial institutions. The insecure investment opportunities in the agricultural sector generally likewise mean that the local private financial institutions and banks have a general shortage of liquidity being unable to secure lines of credit from international partners.

2) Insufficient availability of all necessary inputs fertilizer

This winter wheat season, during the period of optimal planting, there was an apparent a shortage of Compound D fertilizer.

3) Electricity Supply Cuts

This is probably the main cause of the viability challenge as regarding the production of wheat. The levying of electricity tariffs in US dollars has not improved supply sufficiently. Electricity cuts or unscheduled load shedding continue to be rampant. These interruptions to irrigation plans can seriously affect the crop and significantly reduce yields. There have been reports of attempts by the Zimbabwe Electricity Transmission and Distribution Company (ZETDC) to create “wheat farming clusters” which will be afforded preferential power supply. Unfortunately, this will be too little too late for the 2010 season. ZEDTC has reportedly selected the areas of Goromonzi and Marondera as the major “wheat clusters”, but the selection of these areas has been questioned as not being the most appropriate given that there are many other areas perhaps more suitable for winter wheat production.



No Electricity = No Wheat

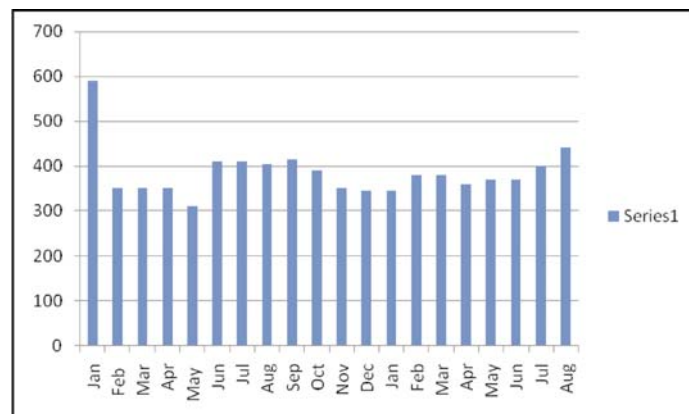
4) Un-realistic Water and Power Tariffs

The tariffs charged by ZEDTC have been unacceptably high and jeopardize the financial viability of production. In this regard, some farmers have even fallen victim to outrageously high billing errors. The Zimbabwe National Water Authority (ZINWA) Tariffs of approximately 6 US dollars per megalitre for private dams and boreholes, and between 7 and 18 US dollars per megalitre for “Ministerial Water” (i.e. State owned irrigation schemes and rivers) also present viability challenges to some wheat producers.

5) Better viability options in growing other crops

The inability to harness the collateral value of land in order to access working capital through private financial institutions has

limited farmers' options. The offer of contract farming schemes by Corporate Breweries relating to the production of Barley, also a “winter” crop, has provided some farmers with a much more attractive and viable alternative to wheat production. The Contractor guarantees the costs of inputs and insurance on production of the crop relieving a great deal of the burdens of producing financing the commodity off the farmer.



Prices of wheat since January '09 to Aug '10 (Source Croplink)

The negative experiences suffered by most wheat farmers this season and in last few years have led to a justifiable perception that investment in wheat production is simply not viable in the current environment. The downward trend will consequently continue unless there is substantial improvement in electricity supply and the necessary policy reforms are made. cfu

TIGER ODYSSEY
ZAMBEZIRIVER

Under new management

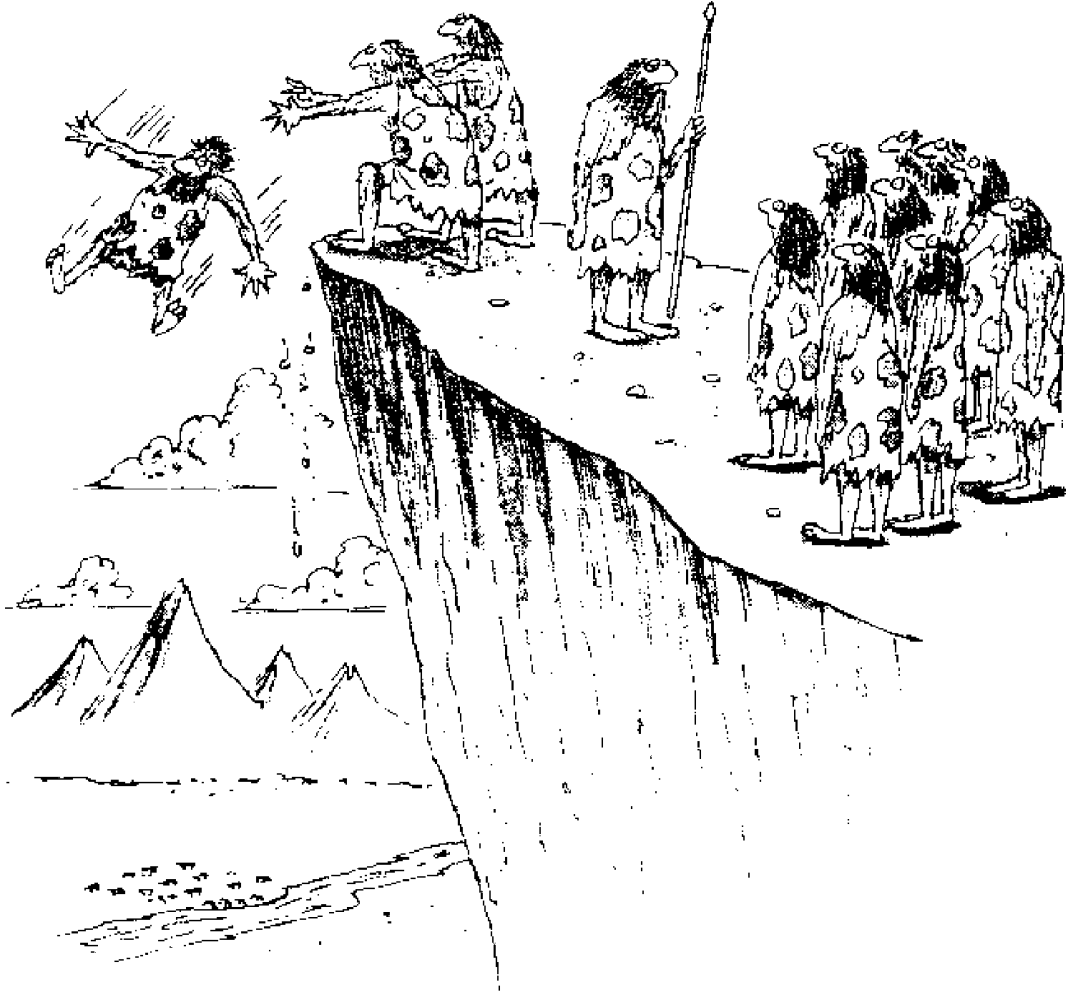
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Millennium Ecosystem Assessment

"In the past century, more than three quarters of all known crops have slipped into extinction."



"So, does anyone else feel that their needs aren't being met?"

Human beings have changed their environment more in the past 50 years than at any other point in history. That stark statistic emerges from the Millennium Ecosystem Assessment (MA) which assessed the consequences of ecosystem change for human well-being. From 2001 to 2005, the MA involves the work of more than 1,360 experts worldwide. Their findings in a report that reveals a massive loss of biodiversity in recent decades – provide a state of the art scientific appraisal of the condition and trends in the world's ecosystems and the services they provide, as well as the scientific basis for action to conserve and use them sustainably.

In the past century, more than three quarters of all known crops have slipped into extinction. With them have gone the unique attributes they have acquired over millennia – their ability to survive hot summers or cold winters, to thrive in dry conditions or in areas prone to flood and to withstand pests or resist disease.

Agro-biodiversity – a term that encompasses all plants, trees, animals, insects, microbes, pathogens and fungi occurring in agricultural systems – plays a pivotal role in ecosystems, securing pest control, pollination, erosion control and biomass production. Less genetic diversity means fewer opportunities for the growth and innovation needed to boost agriculture at a time when populations are soaring and the planet is facing critical environmental challenges.

Agriculture is the largest user of biodiversity and farmers are its main stewards, so the way they develop their crops and animals has an incalculable influence on the ecosystem. The United Nations has declared 2010 as the international Year of Biodiversity in an effort to focus attention on the risks and encourage sounder practices. For agriculture this means adopting farming systems that favour agro-biodiversity such as agroforestry and conservation agriculture. For developing countries, in particular, it also means placing a premium on the rich variety of local plants and livestock breeds developed

over the centuries rather than joining a rush to concentrate on a few varieties designed for intensive farming.

Traditional knowledge is an invaluable resource for ensuring that best practices for sustainable agriculture are developed, continued and adapted, affording protection to communities against shocks that they cannot control. In Mozambique, knowledge about wild plants such as the Mungomu tree played an important role in staving off famine for rural communities during the long civil war.

The ideal partnership pairs traditional knowledge with local research, coupling information about low - input, high - resistance crop varieties used by indigenous farmers with potentially higher yielding, shorter growth cycle varieties produced by scientists and made available to a wider audience.

The success of Nerica rice is based on the combination of indigenous knowledge with scientific research, combining the best attributes of African *Oryza glaberrima* with *Oryza sativa*, which originated in Asia. In Limpopo, South Africa, the Agriculture Research Council is conducting research among farmers on the indigenous knowledge systems and helping them to identify and document traditional seed preservation.

Fair Shares

Establishing and protecting intellectual property rights is crucial in the fight to conserve biodiversity. The FAO-led International Treaty on Plant Genetic Resources for Food and

Agriculture (ITPGR), which entered into force in 2004, allows governments, farmers, research institutes and agro-industries to work together pooling their genetic resources and sharing the benefits from their use. Several benefit-sharing projects aimed at helping farmers conserve their plant genetic resources have been launched as a result of the treaty. In Africa these include Ethiopia, Lesotho, Mali, Sierra Leone and Zimbabwe.

Keep it Local

Smallholder farmers and pastoralists fulfil an invaluable role in conserving biodiversity, developing livestock breeds that can make use of marginal environments under tough climatic conditions. But domestic animal diversity is being lost at an alarming rate as local livestock breeds are crossed or replaced with higher-yielding exotic animals and habitats of pastoralists and their animals steadily disappear. *cfu*

KEY FIGURES

- 12 crops and 14 animal species now provide most of the world's food.
- 75% of all known food crops have disappeared in the past century.
- 20% of known livestock breeds are now classified as being at risk. 9% are reported extinct.
- 20% of rangeland is estimated to be degraded through over grazing and over harvesting.



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Development Aid

Aid should focus on climate resilience and less intensive farming models

Subsistence farming may be seen as a low rung on the development ladder but it can play a vital role in helping low-income countries to adapt to climate change. Future development aid should focus on preparing countries for climate change, including promoting subsistence farming, according to the sustainability NGO Forum for the Future.

In a new report, part funded by the Department for International Development (DfID), it says that progress in tackling poverty in developing countries will be reversed if NGO and government development policies are 'blind to climate change'.

It says that while aid agencies are quick off the mark to provide aid in humanitarian crises, more long-term consideration of climate change needs to be built into economic development programs.

Climate change and development should be seen as 'complementary, not competing, issues', said Forum for the Future CEO Peter Madden, and should include, for example, investing in renewable energy, low-carbon transport and low-input agriculture, which will help reduce reliance on expensive fertilisers to maintain crop yields.

The report recommends that development agencies rethink any support for intensive agriculture in favour of subsistence farming, which, while traditionally seen as 'near the bottom of the development ladder', may better prepare countries for the impacts of climate change.

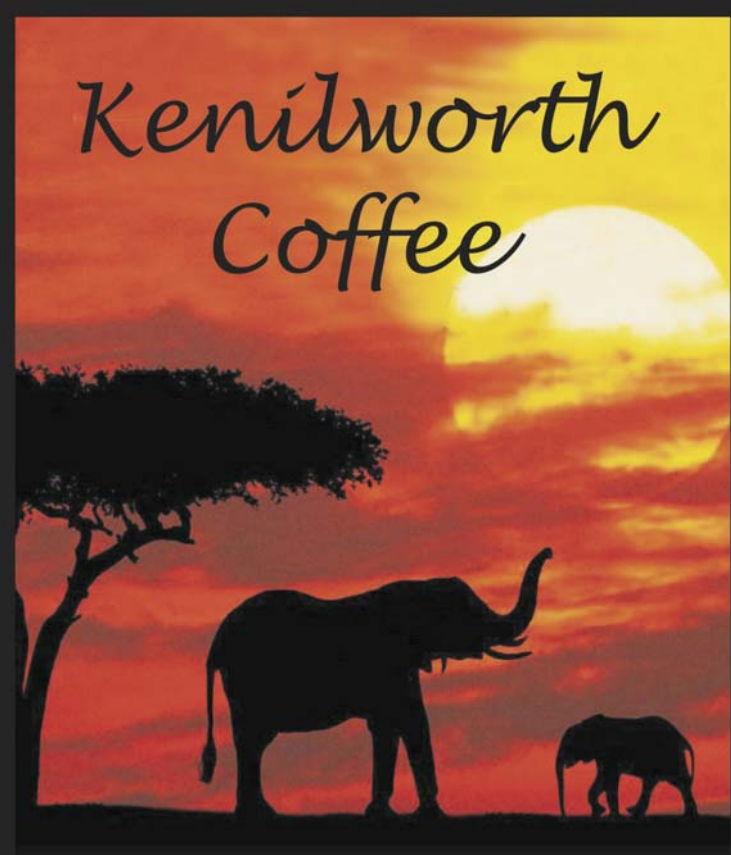
Obsessed with industrial model

DfID was criticised by MPs earlier this year for failing to support long-term agricultural programmes and being obsessed with an 'industrial model' of food production that ignores the needs of smallholder farmers who make up the bulk of food production in less industrialised countries.

Development NGO Practical Action welcomed the call for more support for less intensive farming models.

'By focusing on simple, small-scale solutions, families on the front line can adapt to their changing climate. From the pastoralist lands of Kenya to the floodplains of Bangladesh, we see a compelling case for more ambitious support of adaptation measures now - the survival of whole communities depends upon it,' a spokesperson for the charity said.

International development minister Stephen O'Brien made no comment on support for subsistence farming but said DfID was working, 'to help the world's poorest people prepare for the potentially devastating effects of climate change and shift to clean technologies'. *cfu*



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Common Bacterial Causes of Mastitis



Mastitis is a persistent, inflammatory reaction of the udder tissue in cows. This potentially fatal mammary gland infection is the most common disease in dairy cattle. It is also the most costly to the dairy industry. Milk from cows suffering from mastitis has an increased somatic cell count, and can pose a health risk.

STREP. AG. MASTITIS. (*Streptococcus agalactiae*)

Contagious bacterial infection of the udder.

Where do they live?

In infected quarters and in mouths of heifers fed mastitic milk.

How is infection spread?

During milking, on hands, equipment, washcloths and infected heifers suckling each other or self-suckling. It is important to note that milkers can carry the infection on their hands for up to 10 days after dealing with an infected cow despite washing their hands. Thorough scrubbing of hands is the best way of dealing with it but even then some milker's hands remain infected. It is important that milkers sanitize their hands in between cows and thoroughly scrub their hands at the beginning and end of milking. If infected milk remains in teat cup liners it can infect the next six to eight cows that are milked. It is therefore important to flush out clusters in between each cow, preferably with 85°C water for five seconds or water with disinfectant in it for two minutes.

Disease Type:

Mostly subclinical with very occasional clinical cases.

Detection:

Culture of milk samples from high SCC cows (over 300 000)

Culture of bulk tank milk samples.

Effects:

Reduced milk production

Astronomically high BTSCC (regularly over a million or more)

High bulk tank TBCs (*Strep. ag* is one of the few mastitis pathogens that can cause high TBCs in its own right. A single quarter infected with *Strep. ag* can carry up to 100 000 000 bacteria/ ml of milk. Imagine what that does to your TBC!).

Treatment:

Strep. ag is sensitive to most antibiotics. It is usually sensitive to penicillin which has good distribution in the udder when given intramuscularly. It is NOT sensitive to streptomycin. Very good results with curing and eliminating the infection from the herd are possible with herd blitz therapy.

Estimated Cure Rates:

Treatment during - 80 to 100%

Treatment at drying off - 90 to 100%

Preventive Measures:

Use separate, individual paper towels to wash and dry udders premilking.

Use post milking teat dipping

Use dry cow antibiotic in all cows at drying off

Milk infected cows last

Purchase uninfected cows

DO NOT feed mastitic milk to calves.

NIRD 5-point plan for control of mastitis

1. Prompt and correct treatment of clinical mastitis cases.
2. Post milking teat dipping of all milking cows after every milking
3. Dry Cow therapy of all cows
4. Cull chronically infected cows
5. Proper maintenance of milking machines and milking procedure.

STAPH. AUREUS MASTITIS (*Staphylococcus aureus*)

Contagious bacterial infection of the udder.

Where do they live?

Infected quarters

Infected skin of cows and milkers

Milker's nostrils

Mouths of heifers fed mastitic milk.

How is infection spread?

During milking, on hands, on equipment, washcloths and heifers suckling each other. Other precautions as for *Strep. ag.*

Disease Type:

Subclinical with samples repeated clinical flare-ups in infected cows.

Common cause of severe gangrenous mastitis.

Detection:

Culture of milk samples from clinical cases and high SCC cows.

Effect:

Reduced production

High BTSCC

TBC can be low if milking hygiene is okay

Abscesses in udder

Affected quarter may cease to produce milk.

Treatment:

Usually resistant to penicillin type antibiotics. Usually sensitive to cloxacillin. Do sensitivity tests.

Estimated Cure Rates:

Treatment during lactation - 40 to 60%

Treatment at drying off - 50 - 60%

Cure rates of less than 30% can be expected in long standing (chronic) infections).

Preventive Measures:

Cull chronically infected cows

Use separate individual paper towels to wash and dry udders pre-milking

Use post milking teat dipping

Milk infected cows last

Dry treat all cows

Purchase uninfected cows

DO NOT feed mastitic milk to calves

NIRD 5-point plan for control of mastitis

STAPH. NON AUREUS MASTITIS.

(*Staph epidermis etc*)

Contagious infection of the udder.

All findings and control same as for **Staph aureus** but they sometimes respond better to antibiotic treatment (do culture

and sensitivity testing) and the mastitis is usually less severe and more subclinical.

STREP. NON-AG MASTITIS. (*Streptococcus dysgalactiae, Streptococcus uberis.*)

Environmental/contagious infection of the udder.

Where do they live?

Environment (manure, straw bedding, contaminated soil or water, infected skin, infected udders)

How is infection spread?

The initial source of these bacteria is the environment, however if a chronic infection is set up in the udder then infection can be passed in during milking if proper control measures are not in place as discussed with other contagious bacteria. Incidence of this type of mastitis increases with WET milking even if disinfectant is used in the washing water.

Disease Type:

Clinical and subclinical.

Detection:

Culture of milk samples from clinical and high SCC cows.

Effect:

Reduced production

Some infected cows can become very sick (fever, off feed)

Can have low or high BTSCC (depending on whether cows become chronically infected)

Can have low or high TBC (for same reason as BTSCC and because it is more common with wet milking).

Treatment:

Sensitive to most antibiotics except streptomycin

Occasional resistance encountered so doing culture and sensitivity testing is a good idea.

Estimated Cure Rates:

Treatment during lactation - 70 to 100%

Treatment at dry off - 70 to 100%

Preventive Measures:

Milk only CLEAN, DRY teats

Keep bedding dry and clean

Cows should calve in a clean, dry area



Keep yards, pastures and walkways dry
Maintain equipment properly to prevent liner slips
Implement strict 5 point plan as with *Strep. ag*

COLIFORM MASTITIS.

(*E. coli*, *Klebsiella spp*, *Pseudomonas spp*)

Environmental bacterial infection of the udder.

Where do they live?

Environment (manure, bedding, contaminated soil or water, check your boreholes!).

How is infection spread?

From the environment to the cow at any time when her teat sphincter is open.

Disease Type:

Mostly subclinical, short term infections
Newly calved, older cows may have severe clinical, toxic infections and may appear to have milk fever.

Detection:

Culture of milk samples from clinical cases
Clinical signs in toxic cows

Effect:

Reduced production
If sole cause of mastitis problem then BTSCC will be low (below (200 000) with occasional spikes.

TBC high or low depending on milking hygiene
Some infected cows become very sick. They show signs of milk fever and clinical mastitis and need calcium, antibiotics (IM or IV) and aspirin to recover.

Treatment:

Strip the affected quarter at least 5 times a day.
Resistant to most antibiotics so do culture and sensitivity testing
For severe cases consult a veterinarian
Many mild infections self cure especially with 5 times a day milking.


Preventive Measures:

Milk only CLEAN, DRY teats
Keep bedding clean and dry
Cows should calve down in a clean, dry area
Keep yards, pastures and walkways dry
Make sure cows stand on clean concrete for at least 30 minutes after milking
Maintain equipment to prevent liner slips.

CORYNEBACTERIUM BOVIS MASTITIS.

Presence in culture of this pathogen from infected milk (clinical or subclinical) suggests lack of or incorrect teat dipping. This is not to say that teat dipping has no effect on the other pathogens, only that it is 100% effective against *C. bovis* and about 50 – 90% effective against other contagious bacteria.

ARCANOBACTER PYOGENES MASTITIS.

Transmitted by: - cows, flies. If cow is infected keep her separate- antibiotics take the smell away but the infection is still there so you must cull the cow as they are a huge risk to the rest of the herd! 



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Holistic Land Management

In January TIME MAGAZINE ran a feature: “Save the Planet: Eat More Beef.” It is just the kind of message red-meat producers want to hear in light of the bashing red meat and livestock farming has received lately.

Cows have been lambasted as methane-belching contributors to global warming, but now it seems that well-managed veld-reared herds are essential in combatting one of the major causes of climate change – desertification.

In agricultural circles this is not new news. Zimbabwean-born holistic management pioneer Allan Savory has been advocating it for the past 50 years, but it's only in this area of environmental crisis that Allan and like-minded thinkers are grabbing the world's attention.

In June this year, Allan's Operation Hope project in Zimbabwe – proving how cattle can transform degraded veld into lush natural pasture – won the 2010 Buckminster Fuller Challenge. This premier international competition recognises initiatives that radically advance human well-being and the health of the planet's ecosystems. Allan won US\$100,000 to develop his work. (Well done Allan)

Farm for the Future of Veld

By Allan Savory

“The fate of civilisation today hangs on two slender threads – the correct management of livestock, and the rapid development of benign energy to sustain cities and mass transport,” says Allan Savory, author of **A Global Strategy for Addressing Global Climate Change**.

There's a common perception that cows damage veld. But the reality, as Allan discovered, is that grazing animals play a crucial role in the health of arid lands.

There's a critical relationship between the soil and the hooves of grazing animals. In seasonal rainfall environments, the land rapidly turns to desert in the absence of animal impact.

Desertification Explained Simply

“The world needs to connect blaming biodiversity loss on desertification and desertification on climate change.”

Dry true deserts such as the Namib and Gobi do occur. Most of today's vast deserts, larger than many entire countries, are skeletal remains of former grassland/savanna environments. Desertification is the name that was, unfortunately, given to the early death throes of grasslands and savannas.

I recently browsed through a book about the Taureg who have lived in North Africa for centuries. The earliest record of their land, depicted in 6,000 year old rock art, shows pastoralist people herding cattle amongst savanna grassland herbivores

such as gazelle and giraffe. The book depicts the Taureg of around 400BC in traditional black headdresses with camels and swords, while modern photos show them, still with their headdress, but in Toyota pickups with AK rifles. A sad record of human interaction with the environment and it's link to violence.

So, think of desertification as the process of gradual dying, of low rainfall grasslands/savannas, and try to understand that this dying process occurs because of biodiversity loss. Without biodiversity loss (see simple explanation of biodiversity loss) desertification does not occur and thus what we call desertification is merely a symptom of biodiversity loss.

When soil is exposed on a square metre of land the temperature extremes between night and late afternoon become far greater, changing the micro-climate considerably. It is simply impossible for the micro-climate not to change. As millions of hectares of land become predominantly bare it is difficult not to see that macro-climate will change. Hot bare soil releases carbon. And large areas of exposed soil dramatically decrease the effectiveness of the rainfall.

Desertification is indeed both serious and accelerating. Serious because of it's many disastrous symptoms causing endless human misery and suffering for millions of people, as is occurring today and must have occurred during the abandonment of many civilizations. The most common symptoms are: increasing frequency and severity of both floods and droughts even with no change in rainfall (rain becomes less effective), poverty, social breakdown, abuse of women and children, violence and genocide.

Countless billions of dollars have been spent over centuries in a futile effort to prevent or reverse desertification to no avail, and today it is accelerating world-wide, including within the U.S. Through the ages, and increasingly with modern range science, people tried to address desertification by reducing or removing livestock, planting grass, and trees, developing machines to disturb and cover soil with litter and by irrigation, contour ridging and other water control measures.

No amount of money spent on technology in the form of machines, piping water and irrigating, planting grass or trees can ever result in more than local small scale “apparent success” while the deserts continue to advance. Planting grass and trees, which at first glance appear obvious things to do, cannot reverse desertification for two reasons – in the case of grass it

fails, as the U.S. has demonstrated over vast areas at high cost, because it does not address why the original grass plants died in the first place. And, in the case of tree planting, because over most of the advancing deserts the rainfall is too low for trees and their litter to provide adequate soil cover. Only in those limited areas where rainfall is high enough will tree planting lead to soil cover.

Only livestock now, and to a lesser extent remaining remnants of former wild herbivores in the presence of pack-hunting predators, combined with fire suppression can permanently reverse desertification because this addresses the cause of biodiversity loss (and thus desertification). This is indeed fortunate because using herded livestock involves almost no use of fossil fuels, capital infrastructure or any other high cost – mostly education and training.

Today unfortunately governments, international agencies and media are wrongly attributing desertification to climate change. Equally damaging is the fact that some development and aid agencies are providing vast sums to help people adapt to desertification in the false belief that nothing more can be done.

Biodiversity Loss Explained Simply

Tragically, the importance of what is commonly called 'biodiversity' to the very survival of global civilization is today largely trivialized. We have learned little from history, throughout which many civilizations in all regions failed because of environmental degradation - the loss of biodiversity. Its importance is today trivialized for a number of reasons. First we tend not to heed history, secondly we define biodiversity poorly as the myriad of species on Earth, their genetic diversity and their various environments essentially, and we trivialize the concept. It is trivialized by promoting its importance because species being lost could provide possible future drugs and because mainstream environmental organizations, and thus governments and international agencies as well as media and public generally see and define it largely as the loss of charismatic species. Endlessly we are warned of the rate of species loss greater than any known period in our Earth's long record.

There is another crucial area of error in our mainstream thinking and literature that is of great concern – blaming biodiversity loss on desertification or land degradation.

Where our definitions of biodiversity are lacking is in not recognizing that volume or mass of life is as important as diversity to stability, I believe. I learned the importance of volume/mass of life when we set aside two wonderful areas of land in the 1950's for future national parks in Zambia and Zimbabwe, during my early days as a biologist. Almost immediately, these wonderful areas suffered severe loss of both plant and animal species. Had I not been a biologist studying this I would not have had the opportunity to observe that the loss of species was preceded by a decline in volume/mass of plant life and consequent loss of soil-covering litter. I only understood the significance in hindsight because at the time, like all biologists, my attention was mainly focussed on species.

I fell into the trap of interpreting my data to fit the paradigm of my training, thus blocking my understanding of what was really going on.

In terrestrial environments there are four processes governing the functioning of life – nutrient cycling, water cycling, biological community dynamics and solar energy flow to life above and below ground. The key to the health of these processes, that really function as one, is governed by the fate of the surface of the soil – basically whether it is covered or exposed. It helps to think of soil as a living organism covered with skin like a human – we can live with a certain percentage of our skin damaged, but if too high a percentage is damaged we die. So too does soil and thus most life.

It is for this reason - soil cover - that understanding the new concept of the brittleness scale used in Holistic Management is so vital. Full functioning of all ecosystem processes, in areas of the Earth that are perennially humid, both terrestrial and aquatic, always occurs when we apply the tool of rest (no human disturbance of any sort). This is why the environment recovered surrounding abandoned civilizations in humid environments. However, as we move across that scale, as only happens on land, and the distribution of humidity becomes increasingly erratic with longer dry spells during rain seasons and with longer dry seasons with no rain, we see the results of resting (or inadequate disturbance) becoming increasingly destructive. This is why the environment did not recover surrounding abandoned civilizations in such areas of the world. We see the adverse effects of inadequate disturbance most significantly in the lower rainfall semi-desert, grassland and savanna environments. This fact assumes enormous importance for humanity and climate stability because these environments dominate the Earth's land area.

The main reason resting (either total rest or too few large herbivores to provide adequate disturbance) becomes destructive is because the annually dying mass of plant material shifts from rapid biological decay to gradual chemical/physical breakdown (oxidation and weathering). This gradual breakdown kills most animal-dependent perennial grasses and, particularly in low rainfall environments, increases bare exposed soil between plants. Consequently all four processes – nutrient and water cycling, solar energy flow and biological community dynamics are impaired. We see the results of such biodiversity loss on a mass scale occurring over vast areas of the U.S. Canada, Mexico, China, Australia, Africa, Pakistan, Afghanistan and many other countries. It was to prevent such dying of grasslands that prompted people to burn off the old material thousands of years ago and we continue to do so over billions of acres annually today. Unfortunately using fire (rapid oxidation) does not solve the problem while contributing enormously to atmospheric green house gas.

Nothing I write should be construed as critical of the valiant efforts by many to prevent the senseless slaughter and destruction of charismatic species both directly and through habitat destruction. Such actions need the strongest support of billions of people because this is the only hope of saving such species, until such time as there is greater enlightenment throughout society." *cfu*