Grassroots

Newsletter of the Grassland Society of Southern Africa
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ACCESS
Career Workshop

Impact of the
Global Economic Crises on the Water Sector

7th International
Wildlife Ranching Symposium

46th Annual GSSA Congress

Advancing Rangeland Ecology and Pasture Management in Southern Africa

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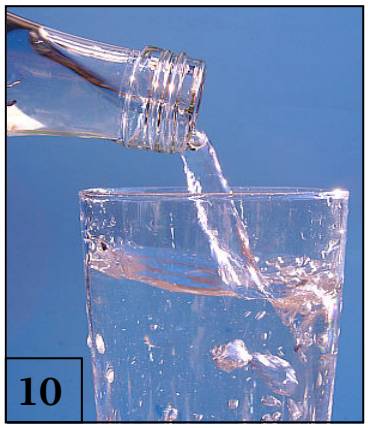

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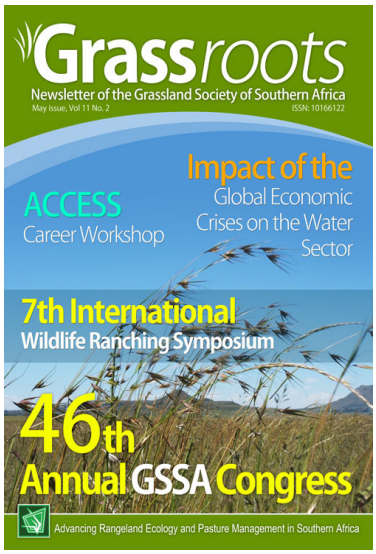

On The Cover: This image of *Themeda triandra* was taken by Justin Du Toit. It is reproduced here with his kind permission.

The Grassland Society of Southern Africa is dedicated to the advancement of the science and practice of range ecology and pasture management.

We welcome any contributions to the Grassroots, in the form of news, informative articles, reports, short research notes, scientific papers and letters to the Editor. For information and submission specifications
Email: Julius at jtjelele@arc.co.za or admin@grassland.org.za
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Editor's Note

A Call for Young Scientists

Dear Readers

Welcome to the second edition of this Grassroots issue. The 46th annual GSSA Congress is to be held in Grootfontein and its approaching quickly. In fact, the abstracts were due on the 29 April 2011! We better catch-up or we will be left behind.

Looking at previous issues of Grassroots, the same names (which are senior scientist) are publishing in Grassroots. As the publication editor, this concerns me. Where are young scientists? Students should use this platform to publish their reports, short articles and common challenges that they face while building their careers. The Grassroots is not just for Hennie Snyman or Alan Short but for all of us. I would like to encourage senior scientists, managers and supervisors to persuade their students to use this platform. Let's all welcome Cathrine Versfeld as our new Grassroots layout and designer.

We hope you will enjoy this selection of articles, news featured in this issue of Grassroots.

Julius Tjelele

Letters

Dear Members
The communications team at IFPRI (International Food Policy Research Institute) would like to identify some sites where they can take journalists on their way to Durban in December for the UNFCCC meetings.
in order of preference, they are looking for:

1. Something within driving distance of Durban
2. Something that people going to the climate change meeting could easily fly to on their way, in SA, Mozambique, Botswana, or Zambia.

The idea is to show journalists some projects that work on agricultural mitigation/ adaptation, so that the reporters can see the projects, see the farms, interview the farmers...
What they want to do is highlight the problems and solutions for climate change and agriculture, to shine a light on what kind of support/policies need to come out of the climate change meeting.

The more inexpensively this can be done and the shorter the travel time involved, the more likely it is that they could pull this off.

Please only respond to this letter if you have a definite project/farm that you are in charge of.
Preferably respond directly to Siboniso Moyo (s.moyo@cgiar.org), but you can reply to me and I will forward to him.

Regards

Freyni du Toit
Administrator
Grassland Society of Southern Africa

Dear Members

I am not a member of your society, but sometimes I have a desire to communicate with you people about eco animal production. I am taking opportunity to say a few things. I am reading so many articles about the perspectives of pasture scientists to improve grassland potential. As with the animal scientists, it is an on-going process for 60 or more years. The animal science people decided to improve cattle through performance testing, for 60 years, without not any prove that those cattle can be more efficient in terms of kilogram live mass turnover regarding any cattle herd anywhere in our country.

The point I want to make is that if anyone's aim is not to improve cattle production on commercial level, then its fiction and waste of time and energy. and being trained in the science of Holistic Management. It applies to both pasture and animal scientists.

I'm working with cattle/ pasture farmers for many-many years whose production performance is beyond any level of the status quo and against much lower costs; all of them are applicators of Holistic Management

HM is not only about reducing the size of camps, that is very simple; management of your plans, is the thing. All of them are specialists of the soil, water/ mineral/energy cycles, bush-encroachment, periods of grazing, intensity of stocking, etc. They have given up obtaining attention of pasture and animal scientists to demonstrate their success story.

I attended a conference in Gandzi, Botswana, in October, where I delivered a presentation about the science of rangeland cattle production. The conference was organised by the Namibian Rangeland Management Forum. From there I travelled to visit Allan Savory at the Africa Centre for Holistic Management, on Dimbangombe Ranch, near Victoria Falls, Zimbabwe. I can write a book on all the activities and education courses given by Allan and other educators in Holistic Management to representatives of governments or NGO's of countries all over Africa, except South Africa. They are well informed about my book,

The Holistic Alternative

I presented copies of it to some of your members at Hoedspruit where Savory delivered a paper. I have the one question, why is it that agricultural people in SA are so stubborn to ignore the wisdom of a man who grew up in Africa and prepared to give back to Africa all his knowledge;--
"No South African agricultural expert could ever mean so much to international veld-management and eco-animal reproduction and bring a world renowned system like Holistic Management to the fore."

Forgive me, I can only conclude with the following statement: Every time I receive some documentation from your society as well as from the animal science society and pay attention to the rigid status quo topics, I have the feeling that realities will never arrive in the vision of scientific people.

Beste groete

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46th Annual GSSA Congress

Advancing Rangeland Ecology and Pasture Management in Africa

11 to 15 July 2011 Grootfontein Agricultural Development Institute, Middelburg, Eastern Cape, South Africa

The Annual Congress will be hosted in the Eastern Cape Province by the Grootfontein Agricultural Development Institute in Middelburg. Situated in the foothills of the Renosterberg and surrounded by the characteristic bossies and koppies of the Karoo, Middelburg and Grootfontein have a long history in the field of agriculture.

The Agricultural College was established in 1911, celebrating its centenary during 2011. The Grassland Society is honoured to be included in the calendar of events of this special year!

Monday: Registration will open at 2pm and the Congress will begin on at 6pm Monday evening with a Keynote Address, Presidential Address and Meet & Greet supper.

Tuesday: Platform and poster presentations, workshops, symposia, etc. until 3pm when the Society AGM will be held followed by a Karoo themed supper with spitbraai. until 3pm when the Society AGM will be held followed by a Karoo themed supper with spitbraai.

Wednesday: Platform and poster presentations, workshops, symposia, etc. plus a **technology transfer session** aimed at the local farming community, entitled "Rangelands: Both Sides of the Coin". Delegates are invited to submit titles for consideration for this session. Three mid-Congress tours will be held on Wednesday afternoon, showcasing the *Thornsprings Restoration Trial*, the *Bergkamp Long Term Trial* and the *History of Grootfontein* (see Mid-Congress Tours for details). A steak evening will conclude the proceedings of the day.

Thursday: Platform and poster presentations, workshops, symposia, etc. followed by the Gala Dinner.

Friday: Four Post-Congress Tours have been planned: *Dairy Farming at the University of Fort Hare*, *Dohne Fine Wool Stud Breeding on the Cradock Experimental Farm*, *Addo Elephant Park: Home to the Big Seven* and an *Extended Tour of the Long Term Trials at Grootfontein: The Oldest in Southern Africa.*

These tours are optional and there will be an extra charge. Delegates who are not on post-Congress tours can depart or can go on local self drive tours from tourism information pack (eg Nieu Bethesda, Valley of Desolation, Mountain Zebra Park).

Scientific Programme

Several special sessions, symposia and workshops are being organised in addition to the standard sessions., including:

- Communal Rangelands and Policy: Keeping Cattle in a Changing Rural Landscape
- Special Session: *Seriphium plumosum* (bankrupt bush)

Further details will become available over the coming weeks BUT if you would like to submit an idea, please do so as soon as possible. Organisers of special sessions, symposia, workshops, etc. are encouraged to publish contributions in a special issue of the African Journal of Range and Forage Science. Remember that page charges for all papers published by members of the Grassland Society of Southern Africa will be ZERO!!

Registration

Early bird registration for members of the Society will be R2800 and R3100 for non-members (and members who have outstanding fees). Payment of these registration fees must be RECEIVED by 15 April 2011. Thereafter, registration will be R3000 and R3300 respectively. Registration should be done via the online registration form or by sending an email to: congress@grassland.org.za

Other Fees

An **airport shuttle** has been organised between Port Elizabeth and Middelburg on Monday 11 July, returning on Friday 15 July and Saturday 16 July. Bookings must be confirmed by 30 June 2011. The cost is R440 return (early bird) and R500 for payments after 15 April 2011.

In addition, a **Grootfontein shuttle** has been organised (two return trips per day, Monday to Thursday). Bookings must be confirmed by 30 June 2011. The cost is R100 (early bird) and R120 for payments made after 15 April 2011.

A Grassland Society of Southern Africa branded **fleece long-sleeved top** is available to purchase at a cost of R160. Orders must be received and paid for by 27 May 2011. Those not attending the Congress are welcome to order these tops - postage will be charged.

All details are on the Congress website, including the best methods of getting to Middelburg. But if there is anything you cannot find, please email congress@grassland.org.za.

See you There!

Financing Our Most Precious Asset

The Impact of the Global Financial Crisis on Financial Flows to the Water Sector in Sub-Saharan Africa

A New Report Released by the Stokholm Water Institute

This report highlights the impact of the global financial crisis on financial flows to the water sector in Sub-Saharan Africa. Our goal was to unpack how the water sector is presently financed and then trace the impact of the crisis on these financing sources. The lead author Is John Joyce, Stockholm International Water Institute , Jakob Granit (SIWI), Emmanuel Frot (Stockholm University), David Hall, Public Services International Research Unit (PSIRU) and David Haarmeyer (Independent Consultant) were co authors

The financial crisis had overlapped with the earlier food crisis…

The purpose of this report is to provide an analysis of the impact of the global financial crisis ("the crisis") on financial flows to the water sector in Sub-Saharan Africa (SSA). To gain an insight into the impact requires first of all an understanding of how the water sector is financed and then the extent to which these financing sources are impacted by the crisis.

The paper assesses the impacts of the crisis in the following three water sub-sectors: water supply and sanitation (WSS), irrigation and hydro electric power. Financial flows from the public sector, Official Development

Assistance (ODA), non-OECD countries (such as China); private sector capital; and household/farmer self-finance are analysed. This report complements a 2009 report by the Stockholm International Water Institute on the impact of the financial crisis on the water sector prepared for the Swedish International Development Agency (Sida) (Winpenny et al 2009).

The paper is structured as follows: Section 2 presents key messages, Section 3 discusses the methodology, Section 4 establishes a baseline, Section 5 looks at how these financing sources may have been impacted by the crisis and Section 6 estimates the impact and offers a conclusion.

The general low level of investment finance to the water sector will continue hamper growth. The water sector in Sub Saharan Africa (SSA) is characterised by low levels of investment, cost ineffective service delivery and weak governance.

The economic impacts of the crisis in SSA are temporary. Recent economic data indicate that the economic impact of the crisis appears to have been temporary on SSA economies, due to positive and high macro-growth forecasts and improved commodity revenues. A significant proportion of the SSA's financial flows in the water sector rely on public sector finance.

The crisis has had a minimal impact on public sector finances in many of the countries, including low income and low income fragile countries, due to widespread growth. Many SSA governments introduced countercyclical spending plans and as a result capital spending has been increasing in percentage of Gross Domestic Product (GDP).

For more details visit: www.siwi.org/publication

New Barenbrug Subsidiary in South Africa

The Royal Barenbrug Group, a family-owned multinational grass seed company, is proud to announce the launch of a new subsidiary in South Africa. The Group now has subsidiaries in all 6 continents, in line with global company strategy. Barenbrug South Africa will focus on local testing, seed production, and marketing & sales of innovative turf, forage grasses and legumes in the Southern Africa region. Barenbrug South Africa will officially start business on April 1st 2011.

Local partners & Expertise

Barenbrug products and brands have been successfully distributed in Southern Africa for many years. The new company will give Barenbrug a stronger position in this attractive market. The wide product range, which includes temperate and tropical grasses, offers sustainable solutions with added value for dairy, beef and sheep farmers as well as for sport venues, golf courses and other amenities. Barenbrug South Africa will supply ALL pasture seed to South African farmers and other rotational crops. Paul Marais will be the CEO of Barenbrug South Africa. "Paul has a long history and a lot of experience in the seed business in Southern Africa.

This venture with local partners will create strong synergy with our worldwide network of plant breeding, seed production and marketing & sales," said Bastiaan Barenbrug, chairman of the Board of the Royal Barenbrug Group. Loubser Wille will be the Marketing and sales manager and also have more than 20 years experience in pastures and with special expertise in Turf grass.

Royal Barenbrug Group

The Royal Barenbrug Group is a family-owned business, whose core activities are plant breeding, grass seed production and international marketing of seed for turf and forage grasses and legumes. With over 550 employees and 24 branches in 15 countries on 6 continents, Barenbrug has been the leading grass seed business in the world for over 100 years. Barenbrug turf grasses are used in international events such as the FIFA World Cup 2010 in South Africa as well as in the Bird's Nest stadium at the Beijing Olympics in 2008 and many other places worldwide.

Contact Details:
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7th International Wildlife Ranching Symposium

Kimberley, South Africa
10 to 14 October 2011

Call for Papers and Submission of Abstracts

Wildlife ranching as a business not only makes a contribution to the conservation of biodiversity, it also provides an alternative or complementary mode of income-generation through the use of land as a non-traditional agricultural resource. Current and future threats to humanity are daunting.

Overpopulation, resource depletion, pollution and greenhouse gases as instigators of climatic change, are clearly recognisable as problems. Agriculture will probably be unable to meet the demands of the future, with an envisaged world population of nine billion by 2050. The consequent destruction of wilderness and the loss of biodiversity through agricultural encroachment are realities we have to face. The preservation of wilderness and biodiversity as a business, directly providing both a sustainable product through game ranching in all

its manifestations and the creation of jobs in the rural environment, is its greatest challenge. Wildlife ranching also maintains ecosystem services. Among these ecosystems services, carbon fixation is becoming a priority of global importance. Wildlife ranches act as carbon sinks.

The Symposium, as planned, will create a great deal of interest and calls for your participation.

For more information:
Glaudin Kruger
Tel: 00 27 28 316 2905
E mail: kruger@kruger-associates.com

The business of conservation - science, livelihoods and values

Early Career Workshop
Applied Center for Climate and Earth System Science

I Samuels and TJ Tjelele
Agricultural Research Council, Animal Production Institute, Irene, South Africa

Igshaan Samuels and Julius Tjelele represented the Grassland Society of Southern Africa (GSSA) at a 2-day workshop hosted by the ACCESS programme from 4-6 March 2011 at Club Mykonos in Langebaan, Western Cape.


Some of the ACCESS participants

The aim of the workshop was to create a network of early career Earth Systems scientists in the country. ACCESS seeks to provide a platform for transformation in science in the country and capacity development for young scientists who will form the next generation of scientific leaders. The 28 participants were associated with various national and provincial government departments, conservation agencies, academic institutions and research councils.

The ACCESS programme is in a phase of robust growth and is looking to engage the next generation of Earth Systems scientists (broadly defined) with a focus on global change. (Includes Climate)

The ACCESS programme is developing new sub- programmes focused on Earth Systems science on a range of space ((local, sub-regional, regional and continental) and time scales(paleo to future predictions). In addition, the programme seeks to provide a platform for meaningful capacity development and transformation in science and thus seeks to engage young scientists who will form the next generation of scientific leaders in the region.

The programme kicked off with a presentation by ACCESS director Dr Jimmy Adegoke who put ACCESS context of the DST Global Change Grand Challenge Science plan. Dr Romilla Maharaj made participants aware of NRF funding opportunities especially for young scientists.

Scopes for research in the terrestrial environment, marine science, atmospheric science and socio-ecological systems were outlined by various early career scientists. Participants were also given the task to critique concept notes considered for incorporation into the portfolio of sub-programmes that ACCESS support and for possible funding. Lastly, a plenary session was held to discuss limitations and opportunities in Earth System Sciences.

The common challenge outlined by young scientists was of funding and most probably this is also a challenge to other young scientists who were not part of this workshop. One of the lessons we learned from this workshop was that there are plenty of funding opportunities out there; it is just up to us as young scientist to utilize such opportunities.

For more information visit www.access.ac.za

ACCESS
Africa Centre for Climate and Earth Systems Science

The Effect of Detanninfication Methods on *Acacia nilotica* and Hay Intake, Digestibility and Nitrogen Retention in Matebele Goats

T Tshabalala[a]*, S Dube[b], E Chivandi[a], JLN Sikosana[c], and T. Senda[c]

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[b] Council for Scientific and Industrial Research, Natural Resource and the environment, South Africa; [c] Department of Agricultural Research and Extension, Matopos Research Station, Bulawayo, Zimbabwe

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Villagers in the south-western parts of Zimbabwe collect pods of *Acacia nilotica* and feed them to goats as a protein supplement during the dry season (Sikosana et al 2002). *A. nilotica* is the most widespread woody plant in Zimbabwe (Timberlake et al. 1999). *A. nilotica* contain tannins, which are water-soluble polymeric phenolics that precipitate proteins (Mlambo et al 2005). Tannins impose limitations to the utilisation of the *A. nilotica* fruits by binding to protein and render it unavailable to the ruminant (Woodward and Reed 1989).

The objectives of the study were to determine the tannin content of *Acacia nilotica* fruits and the effectiveness of wood ash (WA), boiling, Polyethylene glycol (PEG) and Browse Plus™ (BP) as different detanninfication agents of tannins found in *A. nilotica* pods.

Materials and Methods

Study Site

The research was carried at Matopos Research Station, situated approximately 30 km south of Bulawayo, Zimbabwe. The station is situated at 28° 30′ E; 20° 23′ S at an altitude of 1340m above sea level. The area has wet summers (Nov-Mar) and dry winters (May-Sept) with a mean annual rainfall of about 600 mm.

Mean maximum temperature ranges from 29 °C in October to 21 °C in June. The vegetation is characterised by thorny acacia species mostly *Acacia karroo* and *A. nilotica* with a field layer dominated perennial grasses with occasional annuals (Ward et al 1979).

Fruit Treatment & Diet Formulation

The amounts of PEG, BP and WA used to treat the *A. nilotica* fruits was 2.7 kg per 40 kg of the fruits. A PEG solution was made through dissolving 2.7 kg of PEG in 20 litres of distilled water, which was sufficient to wet 40 kg of the fruits. 40 kg of the fruits were then soaked in the solution for 15 min and subsequently sun dried. The BP treating of the fruits was prepared the same way as PEG treatment. Ash powder was made through burning an *A. nilotica* tree. An ash solution was made through dissolving 2.7 kg of WA in 20 litres of water. 40 kg of the fruits were then soaked in the solution 15 min, before they were sun dried. 100 litres of water was boiled and then 40 kg of *A. nilotica* fruits were cooked for 15 min, before they were sun dried. The control treatment composed of untreated *A. nilotica* fruits. After sun drying, all the fruits were milled through a 14 mm sieve plate while hay was milled to pass a 25 mm sieve plate.

The five experimental diets consisted of the variously treated acacia fruits fed as supplements at the rate of 200g animal^{-1} day^{-1}. The treatments were Untreated, WA, Hot water, BP and PEG treated fruits. Hay, which was fed *ad libitum*, constituted the basal diet.

Animals and Their Management

Twenty - four castrated Matebele goats aged between 30 - 35 months and weighed an average initial weight of 38.7 kg (±3.12) were used in the trial. The goats were penned individually in metabolism crates. The goats were allowed to adapt to the different diets and metabolism crates for 21 days. During this period, feed intake and the health of the animals were closely monitored. Goats were fed supplements at 0700h. At 1000h, hay was fed *ad libitum* and water was offered at 1400h. The animals had access to water for 20mins.

Data Collection

Faecal samples and urine from each animal were collected at 0700hrs from the metabolism crates every morning for seven days. Faeces were then weighed and 10% of the total faecal matter from each goat were bulked and thoroughly mixed for the entire collection period and stored in a freezer (-20°C. Urine was collected in plastic containers containing 20ml of 25% (v/v) sulphuric acid. Sulphuric acid preserved the urine through prevention volatilization of nitrogen (Dube 2003). The volume of the urine was measured using a measuring cylinder and 10% of the total urine was bulked over the collection period and stored in a freezer awaiting analysis (-20°C).

Proximate and Fibre Analysis

Organic matter, nitrogen, nitrogen detergent fibre and acid detergent fibre were analysed in feed, faeces and refusals to calculate intake and digestibility. The difference between N intake and N output in faeces and urine was a measure of N retention. Dry matter (DM), and Organic Matter (OM) were analysed (AOAC 1999). Urine was analyzed for N only. Wet dung instead of dry dung was analysed for N to avoid loss of N through volatilisation of ammonia when faecal matter is dried. Neutral detergent fibre (NDF) and acid detergent fibre (ADF) was analysed as outlined by Van Soest et al (1991).

Experimental Design and Statistical *Analysis*

A completely randomised design was used. Animals were randomly allocated to the five treatments and all the treatments had five replications except BP treatment, **which** had four replications. Initial weight of the goats was used as covariate in affecting the digestibility of DM, OM, ADF and NDF and N-retention. The Least Significant Difference (LSD method was used to separate means. A square root transformation was used to transform the N retention values. Data from the digestibility trial were analysed by analysis of variance using a Genstat 6.1. (2002).

Results

Chemical Analysis

The nutritional composition of the untreated and different treated *A. nilotica* and hay are shown in Table 1. Mean values for supplement and hay intakes and apparent digestibility coefficients of DM, OM, ADF, NDF, and N retention, faecal and urinary N are shown in Table 2. In this study there were no differences (P> 0.05) between the grass hay intakes of goats offered treated and those offered untreated fruits (Table 2). The DM, OM, ADF, and NDF apparent digestibility coefficients were not significantly different(P>0.05) among the treatments (Table 2). Both the faecal and urinary N output were not significantly different (P>0.05 (Table 2). Animals on treatments T1, T2, T4 and T5 were not significantly different (P<0.05) in N retention but they were significantly different (P>0.05) from T3.

Acacia nilotica—Courtesy Wikimedia

Table 1. Mean hay intake (g/day), supplement intake (g/day)

Treatment	Hay intake	Supplement
Untreated	426 [a]	75.8 [a]
Wood ash	421 [a]	96.8 [a]
Hot water	375 [a]	33.1 [a]
Browse plus	433	84.1 [a]
PEG	401 [a]	77.4 [a]
SE	6.38	37.65
LSD	123.2	50.52
P-value	0.87	0.141
CV%	22.4	51.6
SED	58.70	24.05

Means with different superscripts within a column differ (P<0.05)

Table 2. Apparent digestibility coefficients for DM, OM, NDF and ADF, nitrogen retention (g/day)

DMD	OMD	ADF	NDF	N-retention	Faecal nitrogen	Urinary nitrogen
0.59 [a]	0.61 [a]	0.55 [a]	0.61 [a]	0.48 [a]	1.73 [a]	1.20 [a]
0.61 [a]	0.63 [a]	0.58 [a]	0.63 [a]	0.50 [a]	1.99 [a]	0.90 [a]
0.58 [a]	0.60 [a]	0.60 [a]	0.64 [a]	-1.03 [b]	1.33 [a]	1.64 [a]
0.58 [a]	0.61 [a]	0.61 [a]	0.64 [a]	1.33 [a]	1.85 [a]	0.93 [a]
0.56 [a]	0.60 [a]	0.60 [a]	0.61 [a]	0.03 [a]	1.77 [a]	1.03 [a]
0.06	0.06	0.60	0.07	0.40	0.55	0.44
0.09	0.08	0.12	0.09	0.54	0.73	0.59
0.86	0.90	0.50	0.62	0.05	0.42	0.11
11.0	9.9	15.9	11.3	27.8	31.6	38.5
0.04	0.04	0.06	0.04	0.26	0.35	0.28

Means with different superscripts within a column differ (P<0.05)

Discussion

The high phenolic content, mostly catechin gallates of *A. nilotica* fruits were probably responsible for its low intake by goats (Mueller-Harvey 1999). In an experiment where PEG was used to bind condensed tannins in high tannin *Lotus pedunculatus*, there was an increase in the intake of *L. pedunculatus* by sheep (Barry and Duncan 1984). This was in contrast with the findings in this study were none of the treatments including PEG did not increase the intake of *A. nilotica* fruits (Table 2). Detanninfication methods used in this study were not effective. Treating the fruits did not increase digestibility of the fruits (Table 2). This may imply that the catechin gallates were active, which, reduced the activity enzymes and microbes found in the rumen (Woodward 1988).

Conclusion

The study showed that use of WA, PEG and BP resulted in no change in the N retention and digestibility of the fruits by the goats. The detanninfication methods were meant to inactivate the condensed tannins, but there was no response.

Acknowledgements

We would like to thank Matopos Research Station, for the use of the animals and other facilities. We also thank Mr. S. Ncube for the advice and criticism during the project.

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GSSA Council News

Council met on 14 April 2011 in Umhlali near Durban.

Arrangements for the Congress from 11-15 July at Grootfontein, Middelburg is well underway with interesting special sessions and speakers. Some exciting mid-congress and post-congress tours were organised and the final itineraries will soon be sent to everyone. Be sure to register at www.grassland.org.za and remember to send in your abstracts.

Some council positions are coming available at Congress, please send your nominations to Freyni du Toit (info@grassland.org.za) by not later than 8 July. She will also send you a reminder of the positions available and your nominations.

GSSA was also represented at the IXth IRC in Rosario, Argentina, with about 15 members attending the Congress. Mike Peel manned the GSSA stall and said he got quite a few inquiries from people and institutions from various countries. He was also well supported by his fellow South Africans.

He was kept busy to such an extent that he did not have time do some additional work.

An exciting new project of council is to establish an audio-visual expert database. The purpose of this is to video capture valuable expert contributions in-field and the establishment of a web-based audio-visual database to preserve, archive and make it available to distance learners.

Congratulations to all students who received GSSA awards! We encourage all students (planted pastures, rangelands and others) to write short articles regarding their studies for Grassroots.

Council would like to thank all members for their assistance and support during this year. Thank you also to all Council members who are stepping down this year.

Hope to see everybody at Congress!

An exciting new project of council is to establish an audio-visual expert database.

Movers & Shakers

Basanda X. Nondlazi Writes,

E-Mail: basanda@saeon.ac.za

I have been appointed as Field Technician at the Grasslands, Wetlands and Forests Node of the South African. Environmental Observation Network (SAEON) after working for Agricultural Research Council (National rangeland and Monitoring Programme) as a Technician. We are hosted by Ezemvelo KZN Wildlife in Queen Elizabeth Park, Cascades, Pietermaritzburg.

I am happy to join a vibrant and experienced team of scientists. This will hopefully provide me a room to learn and grow. My key challenge will be to keep up with the diversity of specialists we will be working with. Nevertheless, it is still "early days", but the plan is to "hit the ground running", learn, work and have fun.

Riaan Dames Writes,

Cell Number: 084 273 8666

Due to the success of farmers practising the "Controlled fodder flow grazing management strategy" as developed by myself during 1996, I got so many requests and interest within other provinces and other SADC countries, that I decided to start my own consulting business, A couple of other scientists are working with me, but from their own offices throughout South Africa. We are trying to use only scientists with a well proven track record with special reference to applied sciences. The types of services that we are offering are listed on our website www.bestfarmer.co.za.

We are proud to announce that our clients succeeded very well during the past 5 years and that we produced no less than 5 Nationally awarded "Best Farmers" since 2007, which includes "ARC Best Stud Breeders in South Africa 2007 and 2009, Voermol Best Beef Farmer in SA 2008, ARC Best Emerging Stud Breeder in SA 2007, GSSA Best Conservation Farmer 2010 and we strive to make the list continuing into the future.

Currently we are offering a short course every two months on the practical application of the "controlled fodder flow grazing management strategy" and the practical use of performance testing data and herd management principles followed by Op Die Aarde Bonsmara, Reivilo, who were nationally awarded three times since 2007 for Best Animal Performance, Best Beef Farmer and Best Conservation Farmer.

Groundwater to play a key role in South Africa - WRC

By Petronel Smith

National Science and Technology Forum Newsletter

The use of groundwater, in conjunction with surface water, could form a key part of the solution to South Africa's water crisis, the Water Research Commission (WRC) said on Tuesday, which marks World Water Day.

WRC water research manager Dr Shafick Adams said the total volume of available, renewable groundwater in South Africa is 10,34-billion m^3 a year. "South Africa is currently using between 2-billion and 4-billion m^3 a year of this groundwater. Therefore there is the potential to considerably increase groundwater supplies in South Africa," he said at a media briefing. In contrast, the WRC found that the assured yield of South Africa's surface water resources was about 12-billion m^3 a year, but more than 80% of this has already been allocated.However, the fact that groundwater is not as easily measured as surface water, resulted in an incomplete understanding of the local hydrogeological conditions and poses numerous challenges.

Department of Water Affairs (DWA) officials, who attended the briefing hosted by the WRC, pointed out that South Africa has a strong groundwater research capacity, but conceded that the research was not always coordinated between institutions to the best advantage and that outcomes are not always implemented. DWA hydro-geological resource analyst Fanus Fourie said groundwater was a safe, generally clean and reliable supply of water, and the development thereof tackled national priorities. "Where available, groundwater can be moved over large distances. However, the challenge is to change perceptions about groundwater," he noted.

"South Africa is currently using between 2-billion and 4-billion m^3 a year of this groundwater."

DWA director of water resources planning systems Dr Beason Mwaka added that emerging challenges, such as the finitude of surface water and feasible development options to increase yield is diminishing, driving the DWA to consider other options,

besides dams and transfer schemes, such as increased groundwater use, reuse of treated effluent and desalination of sea water. "Current water challenges include increasing waste water flow from industry and homes, the diminishing of fresh water resources and illegal water abstractions. Further, the cost of water is set to increase and the shortage of skilled staff also poses significant challenges, along with the wide and remote distribution of water resources," he explained.


Flood in Namibia — Courtesy Wikimedia

Other possible solutions for increasing water security and delivery included implementing water monitoring systems for accountability and early warning, as well as capacity building of staff, users and management institutions. Continuous research for new and improved management technologies and moving from inefficient to efficient water use was also mentioned. A key theme of the groundwater strategy was institutional capacity, functioning and support, meaning water management institutions must be structured and mandated in such a way that groundwater development and management can be optimally achieved.

"South Africa has a strong groundwater research capacity, but the research is not always coordinated between institutions to the best advantage and outcomes are not always implemented..."

National Science and Technology Forum Newsletter

A Strategic Approach to LandCare Projects

By G. Trytsman
E-Mail: gtrytsman@arc.agric.za

Agricultural Research Council,
Animal Production Institute,
Pretoria, South Africa

Since 1998 the National Department of Agriculture (DoA) newly known as the Department of Agriculture, Forestry and Fisheries (DAFF) made funding available to LandCare Grants for the implementation of projects at community level. The vision was to improve the livelihoods of people in an ecologically sustainable manner. LandCare themes were identified and grouped into two key areas, namely Focused Investment (Water, Veld Soil and Junior) and Small Community Grants. In 1999, the ARC-RFI (Range and Forage Institute) became involved, with the implementation of conservation tillage based cropping systems (Trytsman 2008).

What was initially a gypsum project became a LandCare project and ARC-RFI was approached by the ARC-ISCW (Institute for Soil Climate and Water) to assist in the implementation. After this initial project more money was allocated by the then DoA for similar projects, especially on the Easter Seaboard side of South Africa. The aim of the researchers involved was implementing projects that place people at the "starting point, the center and the end of each development intervention. "But as Hendrik Smith admits in his PhD thesis (Smith 2006) "*The first dilemma facing researchers trained in natural sciences is the death of knowledge and skills they need to design manage and facilitate such a process.*

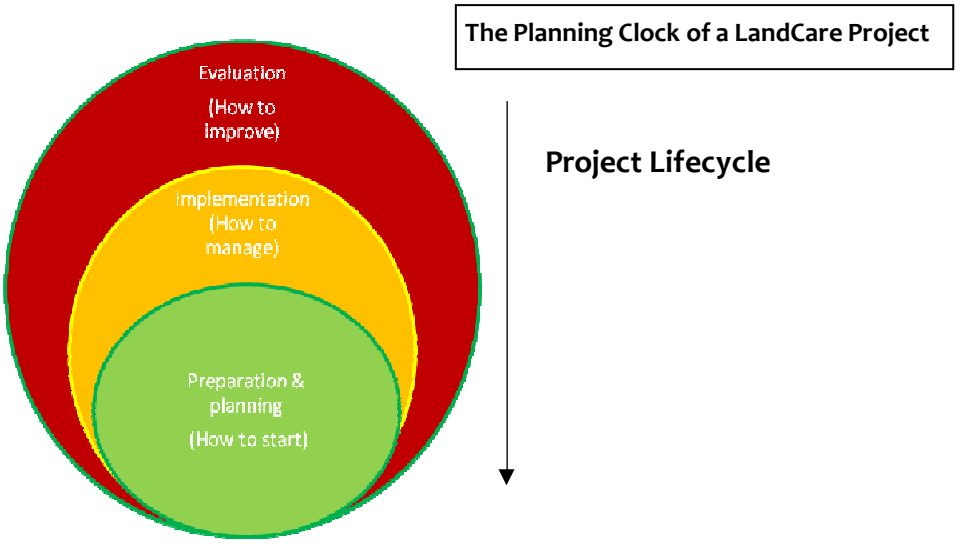
In general, I can categorically state that natural scientists in South Africa are not trained in these aspects. When exposed to such situations, they feel totally left in the dark as to what is required for successfully completing a project.

Furthermore, most of these researchers have very few mentors to guide and assist them through the process. The result is usually poorly executed projects not achieving most of the intended outcomes of good research and development projects".

Methodology of doing a LandCare Project

The theory behind the approach to bring about significant change at community level involves three broad areas as illustrated in Figure 1: that of planning the change, managing the change and how to improve. Whiles planning and preparation are done mostly early during the live cycle of project implementation, monitoring and evaluation (M&E) occur concurrently.

"In general, I can categorically state that natural scientists in South Africa are not trained in these aspects."



How to Start

The building up of confidence, knowledge, communication skills, trust and the willingness to take on responsibility from all stakeholders is a crucial process during this stage.

Preparation

This part of the process can be described as the diagnostic and situation analysis phase. Secondary data should be sourced, getting information, reports and maps from the target area and the local conditions if available, beforehand. This can be useful for background information for the research team. Building rapport, trust and getting beneficiaries to participate from the start should be high on the agenda of the project leader. Tools that can play a vital role to get the target groups to participate, such as rich pictures, semi structured interviews; seasonal calendars etc. can be used.

These tools are helpful for the researchers in that it provide the research team a glimpse in time into the lives of the beneficiaries. Encouraging participation during this early stage of project inception is vital to get buy-in from beneficiaries, strengthen local capacity to influence decisions and to create an environment for change.

For the diagnostic phase, the intended outcomes should be the following:

- To describe and understand the current farming and / or production systems
- To identify and analyse the key farmer problems, needs, fears and aspirations (within agro-socio-economic situation)
- To identify possible and existing interactions and structures (linkages)
- To develop some preliminary solutions/ interventions (ideas) on how to solve these problems
- To plan the first phase (s) work
- Stakeholder analysis report is compiled

Stakeholder Analysis

During these early encounters with beneficiaries it is also wise to spend time in clarifying the FOCUS (system of interest) of research. During a stakeholder workshop beneficiaries cluster stakeholders, according to their roles, influence and importance towards the focus. This workshop involves a range of relevant stakeholders which were identified by primary stakeholders or key informants. A proper stakeholder analysis is impossible without a broader contextual analysis. Stakeholders do not operate in a vacuum. Their relationships, problem perception and resources are influence by social, cultural, political and institutional context in which they operate; with their assistance the stakeholder analysis is completed. After this stage it would be wise to give report back to Stakeholders to verify the data collected.

Planning

A Logical Framework Approach (LFA) is an instrument for objective-orientated planning of projects. Project beneficiaries and the ARC as the implementation agency handling the project were involved in the planning activity. The LFA method was used during a participatory workshop. The main objective of the LFA is to give a logical approach to a complex problem situation.

1. Problem analysis: The tool often used during a participatory workshop is the use of the so called drawing up of a problem tree. The problem analysis is done by having SH listing down the problems (causes or the roots and the effects or the branches). This procedure makes it possible to clearly visualize the causes and the effects of the focal problems and clearly find relationships between different problems.

2. Objective analysis: The objective analysis is a positive reverse image of the analysis. The objectives should answer the following questions;

- Goal: Long term vision of the project owners.
- The project purpose: The very reason why the project is needed.
- Results/Outputs: State the service or product the beneficiaries will receive. What the project is responsible to deliver.

3. Work plan of the project: this is the means to achieve the objectives and the means to eliminate the causes of the focal problem. The activities included the work that is done by those involved in the project. Example of activities are training, on-farm trials etc.

4. Resources and inputs in order to implement the activities: Resources provided for implementing the activity within the framework of the project consists of:
- Technical expertise (local /or foreign, Equipment, Premises, Funds, Time

5. Indicators: Indicators need to be objectively verifiable. In other words, anybody needs to be able to measure the results. Important to state the sources of verification in the project document.

6. Risk analysis and risk management: Includes critical reflection on internal and external factors as well as a plan to overcome influence that can negatively influence the project also called the "killing factors".

7. Assumptions: factors outside the project scope but important to fulfil the goals of the project.

How to Manage and Improve

The implementation phase consist of an iterative and cyclic approach of action and research (i.e. learning) with four major phases act, observe (and monitoring), reflect (and evaluate), plan (and modify) (Kolb 1984). Figure 2 illustrates the use of repeated action research cycles that facilitate an iterative process which maximized learning and integration of new innovations into existing farming systems (Winter 1997)

Monitoring

The systematic, regular collection and occasional analysis of information to identify and possibly measure change over a period of times.

Evaluation

Is the analysis of the effectiveness and direction of an activity or research project and involves making judgement about progress and impact (Abbot and Guijt 1998).

a. ***Awareness and Communication***

Farmers' Days were primarily an awareness-raising activity where the audience, which consists of local farmers, provincial and national departmental staff, local leaders and organisations, and other relevant stakeholders, were informed about the vision, objectives, activities and technologies of the project.

b. ***Training of Trainers***

Training is an important aspect of capacity building, but like technology development, it is more a process than a once-off activity. It is not something undertaken to start a process of technical or organisational change, but rather a continual effort to upgrade human resources by sharing ideas and concepts and disseminating techniques, methodologies and skills.

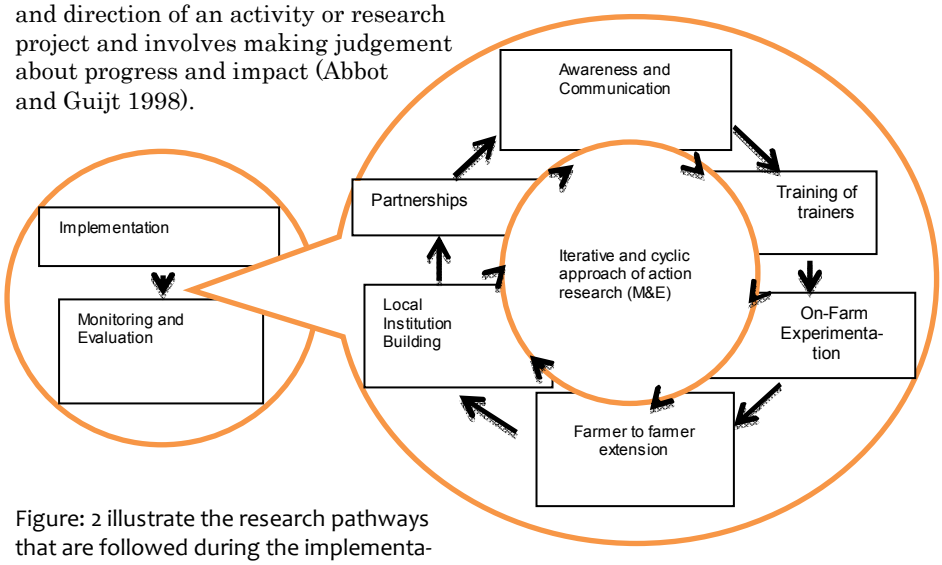


Figure: 2 illustrate the research pathways that are followed during the implementation, monitoring and evaluation phases of the projects (Smith et al 2001).

c. On-Farm Experimentation

The on-farm, farmer manages trials in the LandCare projects created a platform for testing of new technology. These trials were annually evaluated by a panel of farmers and researchers and evaluated according to predetermine guidelines. Inputs for the trials were sponsored by the project. Researchers also provide training, guidelines and technical support to farmers.
The exploratory researcher manage trial were collectively manage by extension personnel and researchers. These trials played a vital role during farmer days and awareness creating.

d. Farmer to Farmer Training

Farmer-to-farmer extension has developed as a means of improving the dissemination of technical improvements at the local level. Farmers working with researchers and extension officers are encouraged to share their technical developments with other farmers building a process of information exchange.

e. Local Institution Building

Two distinct methods were employed in the LandCare projects to foster the development of social structures or local institutions, i) a monthly action forum and ii) the formation of small learning groups. This monthly farmer forum was seen as the 'heart' of the project – it is here that the project was managed in a participatory and adaptive manner.

f. Partnerships

The multidisciplinary nature of the projects mend that the institute responsible for management and implementation had to form partnerships with different tertiary institutions, farmers and other ARC institutes for delivering the required output and outcomes.

Conclusion

Scientists as members of a research team, involved in rural development often need a paradigm shift, from technical focus to a human development focus. New ways of thinking new attitudes are not always easy, but are crucial to the success of the project. An action research approach assisted project teams to facilitate participation by a range of stakeholder in order to ensure sustainable management of the natural resource. A key function of action research was the stimulation of feedback, reflection and social learning amongst stakeholders (Smith et al 2009). Although the soft system approach is dynamic and ever changing, the principles remain the same. Creating a platform that will facilitate and promote social learning and by doing just that, empower beneficiaries through participation to help themselves.

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Media Release

NGOs call on Minister to Bring an end to Separate, Inferior Environmental Rules for Mines

The Centre for Environmental Rights has today, on behalf of 13 civil society organisations, made a detailed submission to the Minister of Mineral Resources on the review and proposed amendment of the Mineral and Petroleum Resources Development Act, 2002. They have called on the Minister to bring environmental regulations for mines in line with those applicable to all other industries in South Africa.

Key points in the submission are the following:

1 The ongoing parallel and inferior environmental management system for mining is no longer justifiable in a democratic society, particularly in view of South Africa's international and national commitments to environmental protection and the green economy. The consequences for the ongoing special treatment of mines are severe, and do nothing to benefit the country, the mining industry, mineworkers or communities. It is time for the mining industry to comply with the same rules as all other industries in South Africa.

2 The MPRDA's environmental management rules provide for: inadequate notice of new applications that violates the principles of administrative fairness; inadequate time and opportunities for public participation; inadequate time for proper assessment of environmental impacts; penalties that are so low as to be no disincentive whatsoever for mining companies (examples given in the submission, but the maximum fine for an offence under the MPRDA is R500,000, compared to the R5 million for similar offences in other environmental legislation).

"They have called on the Minister to bring environmental regulations for mines in line with those applicable to all other industries in South Africa."

"The focus of our concern and endeavours is not to oppose mining, but to ensure that adequate assessment and mitigation of detrimental impacts take place within reasonable timeframes before prospecting and mining are commenced, followed by predictable compliance monitoring of requirements set, and strong enforcement action taken when non-compliance is found. This is the only way to ensure responsible environmental practices at mines, in the interest of workers, communities and the country."

"This is the only way to ensure responsible environmental practices at mines, in the interest of workers, communities and the country."

The NGOs who Support this Submission are:

- BirdLife South Africa
- Centre for Applied Legal Studies, University of the Witwatersrand
- Centre for Environmental Rights
- Earthlife Africa Cape Town, eThekwini and Johannesburg
- Endangered Wildlife Trust
- Environmental Monitoring Group
- Federation for a Sustainable Environment
- groundWork
- Lawyers for Human Rights
- South Durban Community Environmental Alliance
- Wilderness Foundation
- Wildlife and Environment Society of South Africa
- World Wide Fund for Nature – South Africa

Centre for Environmental Rights

Karoo Gariep Conservancy and Seekoei River Private Nature Reserve in the Northern Cape, near Colesberg will cover an area of 450000 hectares upon

Several working farms are currently converting to game. This is the only place in the Northern Cape which is home to hippos which were recently reintroduced. PC Ferreira, one of the founders of this operation, would like to invite student researchers to undertake a habitat analysis of his section of the 260km river and surrounds. This analysis should include aquatic plants and animals (e.g. fresh water mussels and chubby head barbel), water quality, soil studies, and terrestrial animals and plants including the current pastures. This analysis would serve as a baseline study against which the changes in management could be compared. This opportunity could extend to several Honours and/or Masters projects. No funding is available but students and supervisors would be hosted by Mr Ferreira for the duration of field work undertaken on the farm. Please contact PC Ferreira via email info@karoogariep.co.za

RESEARCH OPPORTUNITIES

PhD. Candidates

Wageningen University has a name for innovative and often path-breaking research in the field of life sciences and natural resources. It offers excellent facilities for conducting PhD research. Approximately 220 PhD students graduate annually from Wageningen University. The four-year PhD programme consists of a research component (conducting research under supervision and writing a thesis) and a smaller education component (up to 15% of the total PhD time). If you are interested in taking your PhD at Wageningen University, please follow

On The Back:

Desmodium Intortum

Image Courtesy: Gerrie Trytsman


DESMODIUM INTORTUM