

ISSUE 2 2011

UKZN TOUCH

A UNIVERSITY OF KWAZULU-NATAL ALUMNI MAGAZINE

WORLD'S FOOD SYSTEM NEEDS AN URGENT OVERHAUL

LOOK TO SMALL SCALE FARMERS TO UNLOCK THE
FULL POTENTIAL OF SA'S AGRICULTURAL LAND

AGRICULTURE IN SOUTH AFRICA
IS FEELING THE HEAT
OF CLIMATE
CHANGE



UNIVERSITY OF
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UKZN TOUCH • ISSUE 2 • 2011

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NRF LIFETIME ACHIEVEMENT AWARD FOR UKZN'S VICE-CHANCELLOR

Internationally-acknowledged research successes and advancements in science by Professor Malegapuru Makgoba, Vice-Chancellor and Principal of the University of KwaZulu-Natal (UKZN), were rewarded when he received the 2011 National Research Foundation (NRF) Award for Lifetime Achievement.

GREG DARDAGAN



he award was made at Velmore Estate at Erasmia in Gauteng during an NRF ceremony at which selected categories of rated researchers were formally rewarded. Last year's recipient of the Lifetime Achievement Award was world famous South African palaeoanthropologist and academic Phillip Tobias, a leading authority on the evolution of mankind.

An internationally-recognised molecular immunologist, Makgoba's research work was at its peak in the 1980s and 1990s when he was part of select groups which made landmark discoveries in the field of immunology. These findings have "stood the test of time", continuing to inform basic research and still being cited regularly.

The NRF's rating and evaluation system enjoys enormous prestige among the research community. The Lifetime Achiever Award, introduced in 2004, is presented to a deserving South African who is considered by the Foundation to have made

an extraordinary contribution to the development of science in, and for the country, over an extended period of time. The contribution must be of an international standard and impact.

In an interview, Makgoba (58), who was appointed Vice-Chancellor of the then University of Natal in 2002 after serving four years as the first Black president of the Medical Research Council (MRC) of South Africa, said he was overjoyed and honoured by the award. 'When I was given the good news by the NRF my mind went back to my youth... to the time when I was growing up as a shepherd in Sekhukhune in Limpopo and my school years at Hwiti High where I matriculated.

'I remembered vividly all the support my mom, my dad and all my family gave me and the sacrifices they made to assure my success, the close relationship I had with my brothers and sisters, the camaraderie I shared with people in my village, and the encouragement and fine teaching I received from my teachers, especially my maths and science tutor, Mr Gilbert Matimolane, who I invited to the ceremony.

Left: UKZN Vice-Chancellor, Professor Malegapuru Makgoba with Minister of Science and Technology, Mrs Naledi Pandor at the NRF Award ceremony.

NRF LIFETIME ACHIEVEMENT AWARD FOR UKZN'S VICE-CHANCELLOR

PROFESSOR MALEGAPURU MAKGOBA

'I also recalled my scientific mentors and collaborators over the years. The memories of the journey came flashing back reminding me how fortunate I have been,' said Makgoba, who led the successful unification process which brought the former Universities of Durban-Westville and Natal together in 2004 to create UKZN – a researched university rated among the top 500 in the world.

The following research breakthroughs stand out in Makgoba's career:

Between 1986 and 1988 he worked with Dr Steve Shaw, Dr Marty Sanders and others at the National Institutes of Health in Maryland, United States, making four distinct but complementary seminal discoveries on how immune cells communicate with each other.

These findings were reported in 10 classic publications including:

- The *Journal of Immunology* which contained the peer-reviewed article: "Human Memory T-Lymphocytes Express Increased Levels of Three Cell Adhesion Molecules (LFA-3, CD2, LFA-1) and Three Other Molecules (UCHL1, CDw29 and Pgp-1) and Have Enhanced Gamma Interferon Production". This paper, according to the Citation Index, was the most cited in Immunology in 1989 and is one of 17 core scientific papers that forms the foundations of modern structural biology. According to the United States-based Information Science Institute (ISI) it is a classic publication with more than 1 000 citations.
- *Immunology Today* which featured the invited peer-reviewed article titled: "Human Memory and Naïve T-Lymphocyte Subsets: A Reinterpretation and Further Characterisation of Helper Inducer and Suppressor Inducer Cells". This is also

rated by the ISI as a classic publication with 860 citations.

The findings have implications for major global epidemics such as HIV/AIDS and Tuberculosis and affect how immune cells travel throughout the body in health and disease and how differentiated cell types can be targeted for the treatment of a wide variety of diseases. They were landmark discoveries which continue to inform basic research and are cited today.

While at the Royal Postgraduate Medical School in London in 1993 his research team provided the first evidence that isoforms of the adhesion/signalling molecule (ICAM-1) were not simply membrane-bound but were also circulating in the blood and could therefore be used as a basis to develop tests to evaluate whether there was disease activity or responses to treatment of disease. This made it possible to evaluate and monitor treatment. These findings were documented in the authoritative journal, *The Lancet*, under the title: "Circulating Human ICAM-1 Isoforms. New diagnostic prospects for inflammatory and immune-related diseases". It is also a classic publication with 367 citations.

Apart from his research successes, Makgoba played an important role while President of the MRC to transform the nature of health science research at the Council to refocus its research programmes to address the major health challenges of South Africa and Africa such as those presented by HIV/AIDS and Tuberculosis.

Globally he has been involved in the establishment of several scientific public/private partnerships, including the South African Aids Vaccine Initiative, a uniquely South African programme promoting the development of an effective and accessible vaccine.

He was also responsible for estab-

lishing the African Aids Vaccine Programme, a continental programme that has assembled Africa's leading scientists in various clusters to address the issue of vaccine development in Africa, and is one of the founders of the Global Vaccine Enterprise, a global structure managing the development of an HIV/AIDS vaccine.

He has received numerous awards including the Science-for-Society Gold Medal of the Academy of Science of South Africa; and is a Fellow of the Royal College of Physicians (London); and a foreign associate member of the US National Academy of Sciences' Institute of Medicine.

Makgoba said apart from factors such as an inborn sense of inquisitiveness, the driving force behind his decision to become a molecular immunologist had been to find a cure for the diabetes which afflicted his father.

His advice to young scientists is to focus like a laser on what they want to be and in the areas they want to express their own talents and gifts. After that they should commit themselves to hard work, competition and being the best they can possibly be. 'There's a simple rule in science: there's no prize for coming second!'

What future scientific goals does he have? 'I suppose every scientist who believes he has made a unique contribution to science dreams of winning the Nobel Prize. I have that dream.' **N**

On the 5 October Professor Malegapuru Makgoba, was elected as the new Vice-President for Scientific Planning and Review of the prestigious Paris-based International Council for Science (ICSU). The mission of the ICSU is to 'mobilise knowledge and resources of the international scientific community and to strengthen international science for the benefit of society'.



**MESSAGE FROM THE OFFICE OF THE EXECUTIVE DIRECTOR:
CORPORATE RELATIONS DIVISION, *MS NOMONDE MBADI.***

Institutions of Higher Learning have a moral obligation to serve communities. Relevant curricula and research are the fundamental hallmarks of a socially responsive university. In this regard UKZN academics have a proud and rich history of translational research – research that is in line with the United Nations’ Millennium Development Goals and ultimately benefits communities locally, nationally and internationally.

In this edition of UKZNTOUCH we have chosen the theme Food Security and Sustainability. The theme highlights the gravity of the problem facing nations across the globe. Food and water are scarce commodities; poverty is escalating at unacceptable levels and the impact of climate change on a healthy agriculture sector is devastating. Experts have warned that climate change

is the ‘single biggest threat facing’ our planet. In this issue Professor Roland Schulze warns that urgent action is required by both the public and private sectors. Dr Joyce Chitja believes that the solution lies in small scale farming, providing rural communities with essential resources like accessibility to water and skills transfer through mentorship programmes with commercial farmers.

‘Food and water are scarce commodities: poverty is escalating at unacceptable levels and the impact of climate change on a healthy agriculture sector is devastating. Experts have warned that climate change is the ‘single biggest threat facing’ our planet.,

UKZN is committed to serving communities and in this regard a partnership has been established with eThekweni Municipality’s Water and Sanitation Department and UKZN’s Pollution Research Group to create thriving vegetable gardens.

UKZN has the largest grouping of cosmologists and astrophysicists in the country, says Professor Sunil Maharaj head of the Centre for Cosmology and Astrophysics in an interview with UKZNTOUCH. You will be pleased to read that the construction of the KwaZulu-Natal Research Institute for Tuberculosis and HIV (K-RITH) is well underway. We feature the special groundbreaking ceremony that marked the construction of phase 2 of this major initiative.

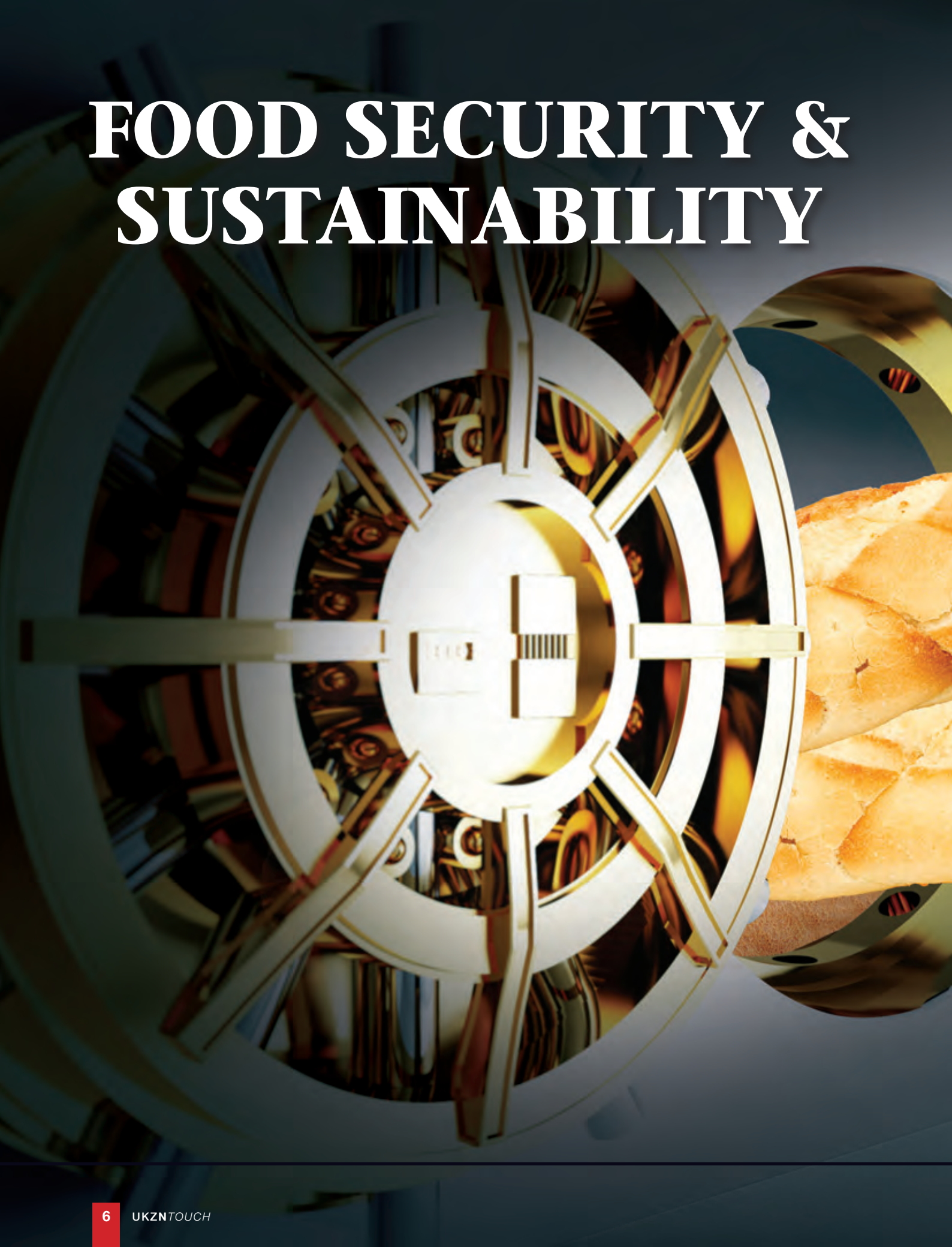
Our alumni are our ambassadors and the 50th Anniversary Salisbury Island Reunion held on 25 June was a nostalgic occasion that brought together graduates and their partners, many from abroad, to a special banquet and a trip to the Island. I wish to acknowledge the sterling contribution of the organisers, who are graduates of the Island, for their commitment and effort in the success of this historic event.

I invite you to send me your comments on mbadin@ukzn.ac.za.

Warm regards

Nomonde

FOOD SECURITY & SUSTAINABILITY

The background of the slide is a complex, artistic composition. It features a close-up of a mechanical watch movement with various gears and components in shades of gold, silver, and brown. Overlaid on this is a circular metallic ring with a cross-like structure in the center. To the right, a portion of a golden-brown bread roll is visible, partially obscured by the other elements. The overall aesthetic is one of precision and craftsmanship, linking technology to food and sustainability.



World's food system needs an urgent overhaul

OUR SPECIAL FEATURE EXAMINES FOOD SECURITY, TURNING THE SPOTLIGHT ON:

- *The ramifications of food security*
- *Look to small scale farmers to unlock the full potential of SA's agricultural land*
- *What food security means*
- *Agriculture in South Africa is feeling the heat of climate change*
- *UKZN at the pulse of food sovereignty in Durban*
- *GM foods not the solution to food security woes*

COMMENTARY: GREG DARDAGAN



A 'BROKEN' SYSTEM

Oxfam – a British-based international confederation of 15 organisations working together in 98 countries to find solutions to poverty and injustice – predicts a broken world food system which will double the price of some staples by 2030, battering the world's poorest people who spend up to 80 percent of their income on food.

Noting that about 900 million people experience hunger today, Oxfam said, in a SA Press Association report, the tally of misery could rise still further when a “perfect storm” strikes a few decades from now.

By 2050, the world's population was expected to rise by a third from 6.9 billion today to 9.1 billion.

Demand for food would rise even higher - by 70 percent as more prosperous economies demanded more calories.

But by this time climate change would have started to bite, with drought, floods and storms affecting crop yields which, after the “green revolution” of the 1960s, had already begun to flatten in the early 1990s.

The price of staple foods such as maize and wheat, which has already hit record peaks, will more than double in the next 20 years, the report predicts. **N**

FOOD SECURITY & SUSTAINABILITY



Securing our daily bread gets more difficult every day in a world of soaring population growth, failed harvests and rising prices caused to a large extent by man's insatiable wants and continuous demands for "progress".



And the mammoth effort required to "fix" mankind's mistakes which have played a major role in dumping us in this precarious situation is even more challenging because our planet is already deep in the mire, with anxiety ever increasing among agricultural experts about global warming and the sustainability of food supplies.

All this yet Governments haven't been exactly falling over themselves to put measures in place to ease the burden on the earth and its inhabitants.

Projections are stark. United Nations research shows there are about seven billion people in the world today... a billion of them hungry. Forty years from now the total population will be 9.2 billion, many with bigger incomes and bigger tummies!

To meet demand, 70 percent more food will need to be produced than the amount achieved in 2000. With the size of agricultural land per person dropping every year, this will be another huge ask.

And what about water – the lifeblood of agriculture? Estimates are that soon there won't be enough to go around. To maintain current levels farmers will need 17 percent more fresh water by 2050 and that will be challenging because already 70 percent of the world's supplies are being used for irrigation.

Another fear is the constant reduction in investment in agriculture in a world threatened by climate change but besotted with industrialisation. Statistics show that development assistance for agriculture has dropped from 20 percent of the total aid being distributed internationally 25 years ago to just four percent today. Even developing countries have slashed investment in agriculture from 11 percent in 1986 to seven percent in 2007.

The food price hikes of 2007/2008 shocked the world, eventually destabilising politics in countries all over the globe, causing anger and resentment which undoubtedly contributed to the violence and uprisings which have swept through many regions, including north Africa.

Climate change and global warming have taken their toll on agricultural harvests and the entire food system. Government representatives from all over the world meet in Durban towards the end of this year at the Conference of Parties (COP 17) in another attempt to thrash out a meaningful agreement to effectively limit carbon emissions. However, there is widespread scepticism about whether any real successes will be achieved.

The doom and gloom reality is depressing but there is hope.

South African food security expert and University of KwaZulu-Natal (UKZN) lecturer, Dr Joyce Chitja, argues in this issue of UKZNTOUCH that part of the answer lies in small farmers. She advocates empowering farmers by helping them develop crops and get them to the market.

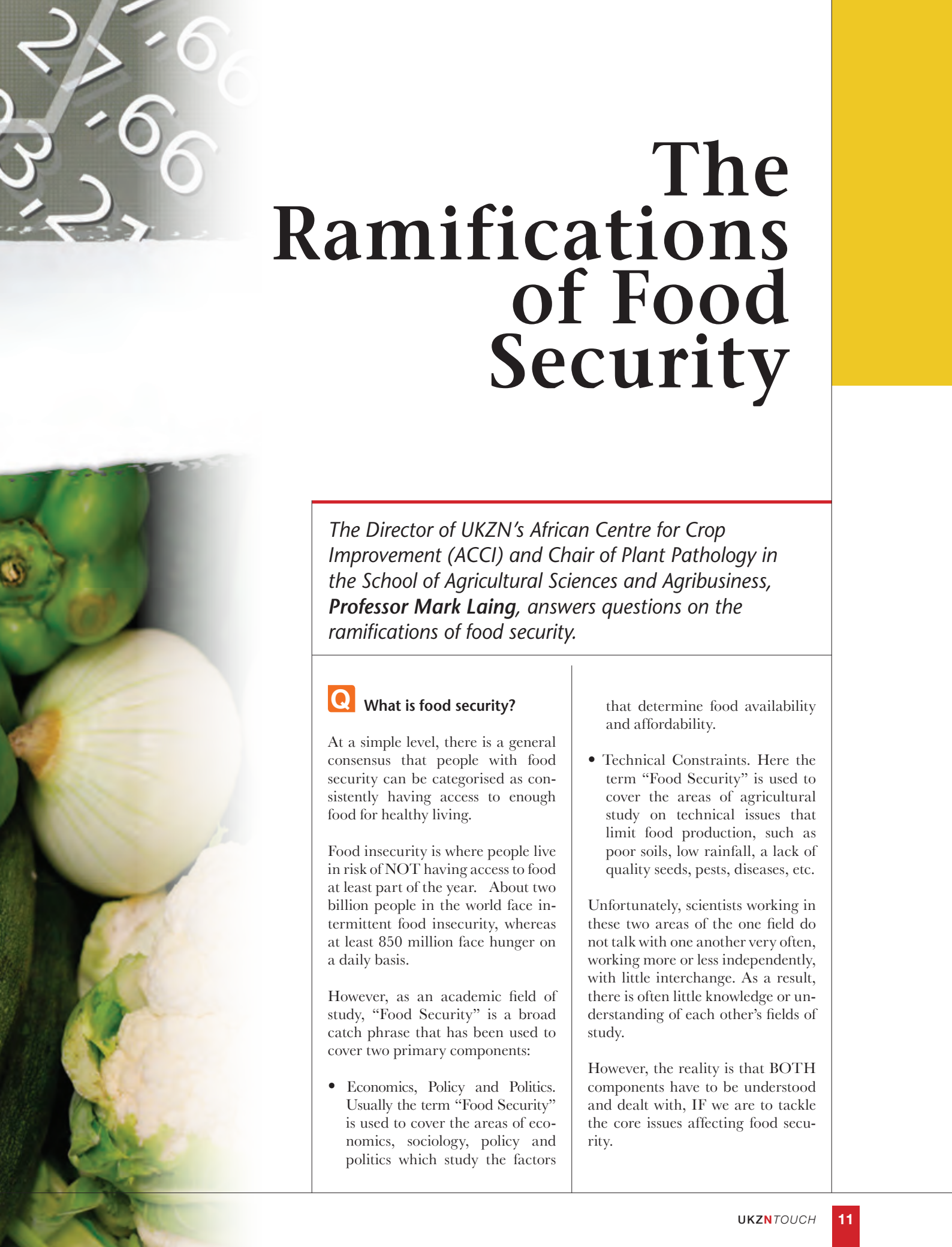
Several other researchers and authorities in the field of food security are featured in articles which all echo the cry for urgent action to stop the rot. **N**

ECONOMICS

POLICY AND POLITICS

VERSUS

AGRICULTURE



The Ramifications of Food Security

*The Director of UKZN's African Centre for Crop Improvement (ACCI) and Chair of Plant Pathology in the School of Agricultural Sciences and Agribusiness, **Professor Mark Laing**, answers questions on the ramifications of food security.*

Q What is food security?

At a simple level, there is a general consensus that people with food security can be categorised as consistently having access to enough food for healthy living.

Food insecurity is where people live in risk of NOT having access to food at least part of the year. About two billion people in the world face intermittent food insecurity, whereas at least 850 million face hunger on a daily basis.

However, as an academic field of study, "Food Security" is a broad catch phrase that has been used to cover two primary components:

- Economics, Policy and Politics. Usually the term "Food Security" is used to cover the areas of economics, sociology, policy and politics which study the factors

that determine food availability and affordability.

- Technical Constraints. Here the term "Food Security" is used to cover the areas of agricultural study on technical issues that limit food production, such as poor soils, low rainfall, a lack of quality seeds, pests, diseases, etc.

Unfortunately, scientists working in these two areas of the one field do not talk with one another very often, working more or less independently, with little interchange. As a result, there is often little knowledge or understanding of each other's fields of study.

However, the reality is that BOTH components have to be understood and dealt with, IF we are to tackle the core issues affecting food security.

THE RAMIFICATIONS OF FOOD SECURITY

INTERVIEW: PROFESSOR MARK LAING

So the term should always cover both aspects. However, it is most commonly used to cover the policy and politics issues.

Q When did food security become an issue?

Hunger and starvation have always stalked mankind. The Old Testament story of Joseph (of the technicolour coat) and the Egyptians having seven good years and seven bad years is actually an issue of food security. Joseph set about creating the storage facilities to provide Egypt with food security despite droughts.

For the developing world, food security remains a central issue. What is interesting is that China and India have escaped the poverty trap 20 to 30 years after they largely dealt with food security issues, using the Green Revolution technical solutions, combined with appropriate policies and politics to manage their changed food production capacity. However, the poor of Asia remain food insecure, although their numbers are decreasing. Whereas, in Africa the number of people facing food insecurity is increasing.

Q What is the basis of that issue?

It revolves around politics and policy. The following are required to facilitate agricultural productivity:

International Policy – for example, the use of agricultural subsidies in Europe and the USA drives down the price of agricultural commodities in Africa, making it non-viable to produce certain crops and products when subsidised products (e.g. Irish butter and US poultry) can be landed in Africa far cheaper than the cost of production in Africa.

Local Politics – whether roads get built that allow for farmers to get their produce to the market to sell; or whether tax money is spent on building a soccer stadium or a dam that allows for out of season irrigation of crops – these are local political decisions.

Production Constraints: Access to Land – this revolves around tenure issues. Who owns the land, the individual or the tribe? If it is tribal land then will anyone invest in capital developments on the land such as roads and dams? And if politicians can take over any farm that catches their eye, then farmers will cease to invest in their farms.

Access to Capital – to purchase the basics of seed, fertiliser, tools, harvest bags, etc. In 2008 Malawi took the political decision (fiercely opposed by development agencies such as the World Bank) to subsidise seed and fertiliser and in two years, the country has shifted from being a net importer of maize to a major exporter of maize.

Natural Environment – this is about the availability of land and the quality of the soil and water resources, coupled with the climate of different countries which combine to determine their maximum potential food production.

Soil quality – most of South Africa has terrible soils, acidic and leached of most key minerals such as phosphate, zinc and boron. We also have limited rainfall that is erratic. Most of South Africa gets less than 800mm. In comparison, most of Ethiopia has deep soils that are neutral (not acidic) and they receive 1 200mm - 2 000 mm rainfall. So Ethiopia's agricultural potential is far greater than South Africa's, which is ironic, given the global perception of Ethiopia as a starving country, whereas South Africa is seen as a breadbasket.



Crop and Animal Breeding

– this can influence productivity greatly. For example, landraces of finger millet in Kenya typically produce 600kg a hectare whereas a three-year conventional breeding programme produced varieties that yielded about four tons a hectare. Similarly, scientifically bred chickens grow incredibly fast meaning that they can be eaten in weeks, not months, as is the case of other chickens.

Seed Availability – there are relatively few seed companies in most African countries and government regulatory systems in most of Africa severely restrict the production and release of new crop varieties. So African farmers are usually very restricted in their choices of seed. Usually they have to grow their own. These may have viruses and other seed-borne diseases and are usually landraces with a yield potential of 10 - 20 percent of a properly bred variety.

Weeds, Pests and Diseases – pre-harvest losses are typically 20 to 40 percent in developing countries. Where pesticides are available, they may be dangerous or inappropriate, or outdated and they often pose great risks to the farmer, the consumers and the environment.

Post-Harvest Losses – losses to rodents, moulds and weevils are at least 20-50 percent. In other words, half of what Africa succeeds in growing is eaten by rats and weevils. We could DOUBLE the availability of food produced in Africa simply by controlling rats, weevils and moulds. This is by far the quickest, cheapest way to increase food availability in Africa.

Marketing – small scale farmers usually do not have the transport to deliver their product to the market. Therefore they have to accept the price of traders who come to buy their cash crops or surplus food

crops. And thus they usually only get 5-10 percent of the retail price of their produce in the cities.

Natural Disasters – massive droughts or floods impact on food production. The challenge is how is it best to recover from a natural disaster? Aid agencies mean well but usually destabilise things further. For example, they buy seed in South Africa and give it to farmers in Kenya where the variety is entirely wrong and the yield is very low, at best. And by giving seed away, they bankrupt the local merchants who need to make good extra profit on their small inventory of seed grown in a drought year. Instead the “aid” agencies give away seed and destroy the market for selling seed of locally adapted, locally bred crop varieties.

Q Where are we in the food security debate and what is the debate today?

If there is a debate, then it is this: What are the causes of food insecurity and how are these best managed or solved?

There is general agreement on the nature of food insecurity. It is rather a question of how bad the food insecurity is and how many people it affects.

However, there is little agreement on how to solve the problem. Aid agencies have poured several trillion dollars into Africa but the current aid models have utterly failed to improve the situation. Indeed, some commentators are convinced that aid is an active driver of corruption, poverty and food insecurity. China and India have escaped food insecurity without aid in the past 30 years, whereas Africa is trapped in a quagmire of aid taken to pay off loans, etc.

The other problem is that most politicians focus on the politics and policy aspects of food insecurity,



UKZN'S AFRICAN CENTRE FOR CROP IMPROVEMENT (ACCI)

Ten years ago Laing received funding from the Rockefeller Foundation to train African plant breeders on food security crops: Thus the ACCI was established and set out to train five groups of eight plant breeders at the PhD level with the vision of African scientists solving Africa's food security problems. The ACCI was initially funded solely by the Rockefeller Foundation but in 2007 the Bill & Melinda Gates Foundation came on board as well through a consortium known as the Alliance for a Green Revolution in Africa (AGRA) which is funding a second round of five cohorts of 10 ACCI students. This brings to more than 80 the number of PhDs in plant breeding that the ACCI aims to train. The ACCI students study at UKZN for two years before returning home to do three years of field research, breeding African food security crops. The focus of their PhD research is on the applied breeding of key food crops such as maize, sorghum, cassava and sweet potato for increased disease and drought tolerance and improved yields.



THE RAMIFICATIONS OF FOOD SECURITY

INTERVIEW: PROFESSOR MARK LAING

their comfort and knowledge zone, and avoid the technical constraints to food security, which require some technical background. Hence, the ongoing call for NEPAD countries to spend 10 percent of their budget on agriculture, whereas most spend less than one percent. Funding a cassava breeding project for 10 years is much less spectacular than buying a jet fighter or a tank.

What roles are global warming and climate change playing in food security?

The factor of climate change has not been a major force in food insecurity yet, but it is now starting to increase the severity of the problem. It will add to and exacerbate existing food insecurity and make food production less stable. In East Africa (Kenya, Uganda and Tanzania), for example, they used to experience a long rain period of about five months and a short rain season of three months, allowing for two crops to be grown every year. Both these rain periods have now shortened to roughly three months and one month, respectively. This has impacted significantly on food production in the region.

The full impact of climate change has not been felt yet. At this stage, global temperatures have not risen much, perhaps 1 deg C. Yet the consensus of a number of climate models predict rises of 4-6 deg C in the next 20-50 years which is a vastly more serious situation to face in the future. It seems a long time, but today's children will have to face this problem as adults.

Consider this hypothetical scenario: Imagine South Africa 30 years from now – in 2041. Today's ten-year-old child is a 40-year-old executive, teacher, nurse. Mean temperatures have risen by 5 deg C. A hot day in Johannesburg is 50 deg C, whereas winter cold may plummet to -20 deg C. In the West, the

Kalahari and Namib Deserts expand right into South Africa, all the way to Grahamstown. Nobody lives in the Great Karoo or the Northern Cape because there is no water, and the underground aquifers have been pumped dry. They have become desert areas.

The Orange River no longer reaches the sea, except after floods in the East. Cape Town survives by desalinating seawater because the dams have dried up. Apples no longer grow because there is no winter chilling and other fruit crops fail in the Cape because there is no irrigation water. Rooibos tea has disappeared, killed by the permanent drought.

The “maize growing areas” of South Africa that used to receive 600-850mm of rain now receive 250-350mm of rain, so the farmers grow sorghum and pearl millet, and tepary bean, and keep camels and goats that can live on sparse grass, like much of Namibia and Botswana, and the Sahel Region of North Africa today.

In the East (KwaZulu-Natal and Mpumalanga), rainfall is more erratic and heavier, jumping from 800mm a year to 2000mm a year. This is like the Congo today, a jungle environment is far wetter, with constantly humid conditions, thus increasing pest and disease problems while floods have become more common. Total rainfall in the East has increased but farming has become more difficult. Crops have to change, from maize to rice and cassava. Livestock suffer from a plethora of tropical diseases and dairy is no longer viable. Malaria occurs over the entire Eastern region, together with river blindness and a host of previously unknown tropical diseases. Overall, South Africa has a critical shortage of clean surface water for its people, its industry and its farms, except in the East.

Today's food insecurity in Africa is only now starting to be affected marginally by climate change. This will accelerate over the next 30-50 years at which time the above scenario may not be all that hypothetical.

Has urbanisation contributed to food insecurity?

If one looks at China and India, urbanisation has moved millions of people from rural poverty to urban affluence. Historically, it is perhaps the greatest social revolution ever, in terms of the numbers of people involved. And this will increase, not decrease.

Rural poverty does not contribute to food security. A poor farmer and his family, living on 0.5ha of land, with a poor soil, depleted of any minerals, with no access to irrigation, fertilizer or modern crop varieties has no chance to grow substantial crops to produce a surplus that can contribute to food security for a country.

We find that the crops of such farmers typically produce at 5-10 percent of their yield potential. For example, cassava can produce 120 tons a hectare, but most African small scale farmers get six to eight tons a hectare. Such farmers are food insecure most of the time. They have no reserves, no buffers, no security, and are deeply vulnerable to climatic change.

Subsistence agriculture is a frightening existence of enormous risk and no security, with no chance of the situation ever improving. In a good year, the family will eat well, but food prices go down, so any surplus crops will not earn much money. And in a bad year, the small area of land will not produce enough food to feed the family. It is these pressures, especially the grinding poverty and food insecurity, that drive the



global phenomenon of urbanisation.

In 2009, for the first time in human history, more people lived in cities than in the countryside. So ironically, what is needed to ensure food security is for economic development to take place and provide employment and opportunities for the majority of the rural poor, so that orderly urbanisation can take place without massive unemployment.

Concurrently, we need to solve the issue of land tenure in the rural environment (changing agricultural land from tribal tenure to private ownership), so that a new class of small- to medium-scale commercial farmers can consolidate all the little plots, invest in the land and start growing crops and livestock productively.

Zambia has pioneered this process by allowing individuals to buy tribal land if they have farmed it successfully for five years. The same thing is happening in China. When people leave, their lands are used by the remaining farmers who have bigger farms and benefit from the economies of scale,

produce a food surplus and sell this to the growing urban market.

One positive spin-off of urbanisation globally is that urban people choose to have fewer children than rural people, slowing down global population growth.

Q Is South Africa equipped to address food security and can it help its neighbours become more food secure?

Consider the following:

- We are not managing employment issues in the urban environment, in fact we are losing jobs at present, despite President Zuma's promise to create five million jobs. If urban people have no work, then they cannot afford to buy food, ie they are food insecure unless they are job-secure.
- We are not dealing with tribal land tenure issues so we cannot expect to grow a new class of small- to medium-scale commercial farmers in the major rural

communities, and we cannot expect investment into farms.

- Our agricultural transformation/land re-distribution programme is not working well, and most of the major projects have failed, taking productive farms out of food production.
- Food insecurity affects the urban and rural poor, not the commercial farmers. This is where the work needs to take place. And then the issue is not total food production, but whether people can afford the food that is available but unaffordable.
- Our agricultural extension service is widely recognised as being very poor for a country with such an important agricultural sector. This was true before 1992, and remains the case today.
- Our agricultural research infrastructure is under-resourced and undervalued, and has been poorly managed for the last 25 years, for political reasons.

THE RAMIFICATIONS OF FOOD SECURITY

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- The studies I have seen on food insecurity in South Africa have shown widespread food insecurity in both rural and urban communities. The drivers of the food insecurity have not been addressed at all.
- In a regional sense, South Africa could play a positive role, perhaps by reducing trade barriers in the region to a minimum.

Overall, we are not tackling food security issues successfully and climate change will make the situation worse.



Q Do food security and poverty go hand in hand?

Poverty always results in food insecurity because poor people are unable to buy food. In South Africa, food is available, but it is unaffordable for many. And given South Africa's erratic rainfall and poor soils, rural subsistence farmers are always deeply vulnerable to food insecurity.

Q Because farmers are not subsidised in South Africa the agricultural sector faces huge challenges. Do you agree with this statement?

This is only true because most Northern Hemisphere countries subsidise their farmers. Each dairy cow in the EU earns US\$2.50 (R17.50) a day as a subsidy paid to the dairy farmer, whether it produces milk or not. Agricultural subsidies are deeply destructive and distort global agriculture. Our government needs to protect South African farmers from unfair competition from subsidised farm products.

Q Should government be playing a bigger role in assisting farmers and what could government do practically?

The major role of government should be in the areas of:

- funding agricultural research and extension
- establishing the necessary infrastructure (roads, bridges, dams)
- establishing pro-agriculture policies and structures.

A positive example of government subsidies in the region is that of Malawi. In only two years, Malawi went from being an importer of maize to the biggest exporter of maize in the region, as a result of subsidising the supply of modern

seed and fertilizers to small scale farmers in the country.

Q What role do small scale farmers have to play in the food security arena?

The Malawi example shows that small-scale farmers can be highly productive. However, the economies of scale always benefit medium-scale farmers. When farms get too big, the transaction costs start to outweigh the economies of scale. In South African rural areas the plots most farmers have are relatively small, usually less than one hectare. Yet, even in 1954, there was a recommendation that each small scale farmer and his family in African areas needed 25 acres (roughly 10ha) to be able to live on the proceeds of the farm. Hence, the need for a new class of small-to medium-scale commercial farmers producing food crops for sale. But for this to happen, there would need to be a change in land tenure. Until then, tribal land will remain relatively unproductive, and will not contribute significantly to food security.

Q Will co-operatives assist food security?

It seems to me that successful co-operatives have a productive life of about 20 years after which the transaction costs of running the unit overwhelm the relative value of the genuine co-operative, and they then self-destruct (go bankrupt), or convert into commercial companies which are run as such (farmers may hold shares in the company) but they are no longer co-operatives. Throughout Africa, co-operatives have been tried as a model for African agriculture and have usually failed. Even in Israel, the famed kibbutz system only survives because of massive government subsidies.

Q What is the right model?

Government needs to play a pro-active role in the following areas:

- pro-agriculture laws, regulations and policies;
- pro-trade policies;
- protection of farmers from unfair competition (keep out subsidised butter from Ireland);
- establish the necessary infrastructure (roads, bridges, dams, etc.);
- fund agricultural research and extension properly, with a high status attached to these activities;
- establish a process (like Zambia has) to slowly change land tenure from tribal to individual ownership;
- manage the land transfer process to ensure that productive farms are not lost;
- enforce already existing environmental protection laws (such as soil conservation) effectively;
- manage water resources more transparently;
- take a pro-active role in factoring into agricultural thinking the models of climate change, to create pre-emptive agricultural change plans to ensure that South Africa is well prepared for what the climate models tell us is coming.

Government also needs to ensure a “soft landing” for the rural poor who are migrating from the rural areas into the urban environment. If this is recognised as an unavoidable phenomenon that is actually positive because it will drive industrial productivity in South Africa, as it has in China and India, then urbanisation programmes can be established to manage the process better.

So the answer is, yes, there is much that could be done in South Africa, based on information and knowledge that we already have. Having

the political will to implement the changes and investments is what is required.

Q Will the manufacture of biofuels have a serious impact on food security?

Using starch crops (maize and cassava) to make ethanol is technically very inefficient and only works in the USA because of massive government subsidies. And it has driven up the price of cereals globally. Using oilseed crops to make biodiesel is even more inefficient and non-viable. However, there are more efficient ways of making biofuels, such as extracting oil from algae, and thermochemical conversion of biomass crops into liquid fuels.

The growing cost of diesel for tractors already affects food production. What if there is no petro-chemical diesel available? At some point – therefore – it will be necessary to grow fuel crops in order to grow food crops. But these will be specially bred fuel crops, not maize or soybeans.

Q Is there anything the individual can do to assist in the area of food security?

Firstly the goal is food security. We are trying to avoid food insecurity.

There are relatively few things the average South African can do in their daily life but include the following:

- Systematically buying food produced in South Africa, rather than other countries.
- Making choices to avoid extravagance and waste at all levels – water, electricity, food and resources. This is to adopt a counter-culture approach, given that

we are constantly exhorted by all advertising media to adopt conspicuous consumption as a lifestyle, to drive the engine of capitalism, to “buy, buy, buy”. It is tough to say “no” to all this, and it takes courage and determination, with a clear vision of why it is worth saying “no”.

- At all levels of society, to constantly make the point that agriculture is a core resource of South Africa that is central to our society and to our economy, and that it needs to be supported far more than it is now.

Q Unprecedented demonstrations and uprisings have erupted around North Africa and the Arab world triggered by events earlier this year in Tunisia when the President was forced into exile by a population provoked by unaffordable food among other



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issues, including high unemployment. Do you think governments throughout the region have to take care, monitor prices and improve salaries to avoid the same thing happening to their countries – including SA – eventually?

The political decision to subsidise the price of bread has been made by governments all over the world since the days of the Roman Empire to keep the masses happy. If Marie Antoinette had understood this perhaps she would not have been executed. The problem is that food prices cannot be subsidised without distorting the market and diverting funds away from other investments such as agricultural research that would really reduce the price of food in the long run.

Q Do you think soaring food prices could trigger war or conflict over the race for scarce resources? Could the lack of food security become a serious threat to world peace generally?

Was Malthus right about the unfortunate consequences of uncontrolled population growth on a finite Earth? Undoubtedly. We are staving off the inevitable but already some of the world's natural resources have been wiped out, such as the fish stocks of Peru, Namibia and Newfoundland. What will run out next? Oil, phosphate, iridium?

Geographic determinism is a theory that posits that social behaviour is determined by geography, specifically the natural resources available in a defined area. A corollary is that genocidal conflicts will always occur when vital resources become critically limited, and therefore people start to face severe and constant food insecurity. An example would be the genocide that occurred in both Rwanda and Burundi. Their soils are extremely rich and productive but with rapid population growth, the carrying capacity of the

land was exceeded, and with no alternative means of production, conflict was bound to occur.

The ex-Yugoslavian countries are also in marginal environments where most of the land is rocky and mountainous, and fertile land and viable industry are limited to a few sites.

The theory therefore suggests that the genocide that occurred there was about securing control of the pockets of viable agriculture and industry for specific groups, usually organised on religious affiliations.

A similar case has been made to explain the conflict in Darfur, Sudan, where Muslims are killing fellow Muslims. The land is semi-desert and therefore it has a very low carrying capacity for goats and camels. To grow livestock successfully, each farmer needs many hectares of semi-desert. Armed northerners are killing the people of Darfur in order to take over their lands so they can expand their herds of goats and camels.

Q Some desert countries are apparently planning to buy land abroad in various agricultural producing countries for their own agricultural use. What is your comment on this?

A rich oil-producing desert country faces an unstable future. Their economy is totally dependant upon a finite resource that they know will run out in the foreseeable future. So what options do they have?

- Create an Arabic Singapore, where its ports, manufacturing and industries secure its future. This is what Dubai has chosen to try.
- Secure energy using solar power. Many Arab countries are investing heavily in this technology.
- Secure food and biofuel crops in the future by buying or leasing

land in Africa where “unused” agricultural land still exists. In many cases, the “unused” agricultural land is actually tribal land that is farmed by indigenous farmers. This is what happened in Malagasy, where President Marc Ravalomanana leased about 30 percent of the entire country to Daewoo Logistics of Korea before he was deposed in a coup.

- Go into partnerships with farmers in African countries to produce the food and biofuel crops, using the oil-based capital to finance the infrastructural and agricultural developments that need to take place before the land can be highly productive. This could work well for both communities.

Q What are your views on securing the world's food supplies?

Given that most developing country farmers produce 5-10 percent of the yield potential of the crops they grow, there is potential to produce far more food globally than we do at present. However, it requires society to take agriculture seriously and to invest in it heavily for the next 20 years.

A more worrying issue is that the global supply of phosphate fertilisers is rapidly running out. South Africa has one of the few major deposits at Phalaborwa. In 2008 the FAO estimated that global fertiliser demand would outstrip production by 2013.

Equally important, water for irrigation is increasingly unavailable, and major irrigation schemes globally are starting to fail due to salinity problems. For example, the huge Murray-Darling River irrigation scheme in South Australia is completely compromised by salinity.

The problem is that most of the increases in global food production in

700 million small scale farmers of Africa, for example, have not been in a position to demand that their governments invest in agriculture, and not in frigates and supersonic aircraft, or presidential jets.



the last 50 years have been based on the use of irrigation and fertilisation. If access to both of these critical inputs become increasing expensive or unavailable, then agricultural productivity will diminish globally. This will be especially severe in semi-arid countries such as South Africa, which is very dependant upon irrigation, and whose soils are very poor and need fertilisation for every crop.

Q A commentator states: **"Food prices will continue to spiral upward no matter who is governing. World leaders have known this for years but have done little to avert the crisis, rather they have made it worse by not investing sufficiently in agriculture."** Do you agree with this?

I agree, however, in political terms this makes sense. In the Northern Hemisphere we have had 50 years of unprecedented agricultural productivity and cheap food. Widespread use of massive agricultural subsidies has completely distorted the real cost of food in the Northern Hemisphere, so food prices have not been

an issue for the rich North. Farmers are paid not to farm. Hence, politicians in the North have focused on the economy, i.e. employment levels where 98 percent of the population work.

And in the South, the 700 million small scale farmers of Africa, for example, have not been in a position to demand that their governments invest in agriculture, and not in frigates and supersonic aircraft, or presidential jets. What is South Africa's cumulative investment in agricultural development *versus* its cumulative defence budget over the last 40 years?

Q Farmers need title to their land – many all over the world don't have it so they don't invest in it or protect it. Now even Cuba is talking about giving 700 square metres of land to farmers. Do you think title deeds will make a difference in raising food production?

I am convinced that it is absolutely fundamental to the future of food production that farmers OWN the land that they work. Farming re-

quires capital investment, long term investments that pay off over 20-30 years. For example, an irrigation dam or paving roads on a farm so trucks bringing in the produce do not get stuck. This will not happen if the farmer does not have secure tenure to the land. If the land remains tribal, or if the tenure is insecure (the land can be taken away arbitrarily by powerful politicians), then it makes no sense to develop the infrastructure of a farm. And then the farmers are trapped into the lowest level of subsistence productivity that cannot improve.

Indeed, there is a downward spiral, and their agricultural productivity will systematically get worse because some critical investments such as soil contours will not get made, and this will lead to environmental degradation, and the massive erosion problems that we have all witnessed in tribal areas of South Africa.

The second important discovery by agricultural economists about individual land tenure is that it gives the owners access to capital since they have collateral against which

THE HEAT IS ON



WORLD POPULATION 2011: 7 BILLION
WORLD POPULATION 2050: 9.2 BILLION

By 2050, the world will need 70% to 100% more food than is being produced today

By 2050, the world will need 17% more fresh water than is available today

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to raise a loan. The capital raised in this way can be used to capitalise the farm or to start a rural business or to start processing the food being produced on the farm. Or the land owners can rent their land to a neighbour and earn an income in this way. Or they can share their land with a really good farmer who grows the crop for them and then they share in the profit from the crop. Interestingly, this arrangement happens in the Netherlands where small farms cannot be farmed efficiently, so this co-operative crop share model has developed naturally.

Socialist farming systems have all failed for these reasons. It is a political cactus but until it is grasped, the rural poor cannot escape their poverty.

Q Food and being able to eat properly are going to be the big political issues in the next decade – do you agree with this statement?

This will be true in those countries that have not industrialised and cannot afford to buy food. But the countries of the North, and the BRIC countries, are unlikely to be worried by food production (with the exception of the unemployed people in these countries who will face increasing hunger and hardship). The poorer the country is by GDP, the more likely that food production and availability will not meet demands from within that country.

However, in the longer term (20-30 years) it will affect all countries as climate change, diminishing water resources, diminishing arable land areas, and fertiliser and fuel prices and availability impact on food production.

Q Income and food are inter-related. When people are unemployed and dependent on an irregular sources of income, food inflation hurts the most. And when ordinary people hurt and have no recourse to escape the ravages of food inflation, they will take to the streets. Do you agree?

Agreed. People take to the streets as a last resort and also if they think that the government can make a difference to their situation. The problem is that the systematic drivers of food insecurity are complex and long term. Neither the peoples nor the governments appear to understand the drivers and do not act in time to avert the problems. And full employment in the countries of the South is not likely, which means that many people in the South are not able to grow or buy the food they need now and will be more vulnerable in the future. If 33 percent of Africa faces hunger on a daily basis at present, what will this be in 20 years' time? FAO statistics tell us that only in Africa is food insecurity increasing at present. In all other regions, food security is increasing, and an increasing proportion of people have reliable access to food.

Q Is access to food mainly income dependent?

In the urban environment it is entirely income dependent. In rural areas, what people grow provides the first level of food. However, unless they can produce and store enough food for the entire year for their family, they will have to buy food at some point. This often happens during the "Hunger Period", when the next season's crop is growing but cannot be harvested yet. And last year's maize or rice crop has already been eaten by people and weevils.

Q The consequence of having no income or low income growth is that the poor will starve and become undernourished or fill themselves with things that lead to long term poor health. Do you agree?

Agreed. And being unhealthy, they cannot find work either, for example as a labourer because they are too weak to work well digging ditches. So it is a downward spiral of hunger reinforcing poverty.

Q Can national governments play a role in averting food insecurity and, if so, what can they do?

The systematic solutions are spelt out above but in the interim, use of unemployed people to develop national infrastructure is a sound investment. It worked for the USA during the Great Depression. It worked in Africa for British colonies, indeed my grandfather worked in a road gang building strip roads in Zimbabwe during the depression when he was unemployed. And it worked for China, allowing them to build their infrastructure.

Perhaps it could work for African countries too. Imagine if all African countries committed themselves irrevocably to use 90 percent of their defence budgets for the next 10 years to build infrastructure, using manual labour and training people in semi-skilled labour concurrently. People would be employed, infrastructure would be built. Long term skills would be developed. What could be achieved in 10 years?

Why are the Chinese building Africa's roads, instead of Africans? **N**

LOOK TO SMALL SCALE FARMERS TO UNLOCK THE FULL POTENTIAL OF SA'S AGRICULTURAL LAND

*Small scale farmers have the potential to solve South Africa's – and the world's – critical food security problems, says **Dr Joyce Chitja**, a lecturer in food security at UKZN's African Centre for Food Security.*

To make a serious impact, however, they need backing in the form of access to markets, the provision of sound infrastructure where they live and support from all quarters.

This is the view of UKZN's Dr Joyce Chitja who in 2008 was among the first students in the world to be awarded a doctorate focused on food security. The title of her thesis was: "The Determination of Organic Farming Production Decisions among Farming groups in KwaZulu-Natal".

Chitja, attached to the University's African Centre for Food Security, was in the United States recently where she visited specialists in organic farming which is among her research focus areas.

'Agriculture is a hard job, there's no doubt about that, but we are not doing enough to package it in such a way that it is attractive, especially to young folk. There are people who want to be in that environment but we are not making it sufficiently important or rewarding.

'We need to encourage them to go back to the land and make it worth their while because we will all perish without farmers,' said Chitja.

Small scale farmers could lead the way in solving the worsening food security problem.

South Africa used to be food secure and was in fact a net exporter of food but lost that position in about 2007 around the time when food prices sky-rocketed.

'The number of commercial farmers is dwindling rapidly for a variety of reasons so we need to start encouraging and investing in small farmers. Even if the land is only a few hectares in size, produce from it can make a difference provided extension support and market access are assured.

'The government and all concerned parties need to start assisting small farmers to farm for commercial purposes with one of the goals being to develop markets for them,' said Chitja.

'Right now we talk about small farmers as if they should farm mainly for their own consumption but in reality they should be farming for a livelihood... and that needs support.'

South Africa had an estimated four million small scale farmers with access to a few hectares who needed to be looked at from a commercial point of view rather than being written off as being too insignificant to make an impact.

Chitja said she didn't believe the farmers were content producing for their own consumption – it was all about them not being met half way and supported with skills, technical know-how and market access.

'They need to be organised into producing marketable produce such as avocado pears which are often in short supply and are imported from countries such as Spain.'

She felt commercial farmers could assist by playing critical roles through mentorship programmes. 'I accept it is not an easy interaction because of our history but we need interaction in which commercial farmers transfer skills they have acquired over generations.'

People had moved off the land in search of jobs in the cities but many were unemployed and disillusioned.

'It is tough living in rural areas, so to encourage people back we need to ensure basic amenities – such as water, electricity, schooling, health care and good roads – exist to make things easier. People shouldn't have to walk for long distances to collect water – that is a struggle and for most it's just too hard to live under those sorts of conditions.

'If we improve conditions in those areas it will show people perhaps visiting from the cities that things aren't so bad and that the land can provide a livelihood,' said Chitja.

This could also encourage investors to take an interest and perhaps establish shops and other businesses around the farms making it easier to live there. **N**



FOOD



Sovereignty

What Food Security Means

Dr Harald Witt is a lecturer in the Economic History and Development Studies Programme at UKZN and specialises in the field of food security, or food sovereignty, as he prefers to term it.

Q What is food security in your opinion?

Food security is a concept, which like many well intentioned concepts, has now been co-opted by a neo-conservative and profit maximising trans-national agribusiness class. I therefore prefer to engage with the question of food from a food sovereignty perspective. In terms of the international farming and peasant movement Via Campesina, food sovereignty can be understood as: “the right of each nation to maintain and develop its own capacity to produce its basic foods respecting cultural and productive diversity. We have the right to produce our own food in our own territory. Food sovereignty is a precondition to genuine food security”.

In essence the concept of food sovereignty would emphasise: the right to food; access to productive resources; mainstreaming of agro-ecological production (protection of the natu-

ral resource base); and localised trade and local markets. In the contemporary discourse food security could be understood to be a more technical concept while food sovereignty would essentially be considered to be a political concept.

Q Does food security mean different things to different continents and countries?

Definitely. Every continent, region, sub-region and country would have its own unique history, particular level of penetration by trans-national capital, degree of international economic integration, domestic policy, natural resource base, climate, farming culture and so forth which would determine and shape the manner in which food sovereignty (security) would manifest itself and be achieved.

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Q Has urbanisation contributed to food security issues?

There are a variety of push-pull factors which have contributed to rural-urban migration. In many instances (although perhaps less so in South Africa) independent farmers have had little option but to leave their lands due to drought, indebtedness, political interference, lack of political support, land appropriation, subsidised competition and so forth and not because they no longer wish to work the land. Nonetheless, the resultant loss in subsistence and surplus agricultural production would impact on local food production and therefore, potentially, on food sovereignty (security).

To respond to the question more specifically requires a deeper questioning of the desired nature and character of a rural economy and a recognition that urban areas should also be key centres of food production. Conventional development theory considers the depopulation of rural areas to be a key indicator of success and modernity as it paves the way for the introduction of an industrial agricultural sector. Yet due to the inability of most economies to absorb an urbanised labour force such reasoning is clearly flawed. Similarly, the archaic rationalisation that agriculture is a rural activity not practised by urban residents will also have to be challenged.

Unfortunately due to the disparaging attitudes towards manual work, lack of political leadership, the alienation of citizens from the physical production of food and the dominance of the need for instant gratification in a consumerist society there is an element of truth that citizens – South Africans in particular – no longer wish to work the land. This makes it difficult to challenge the dominant model of food production (large-scale, industrialised farming) which is a requirement if a sustain-

able production path, with the goal of achieving food sovereignty (security), is to be pursued.

Q Do small scale farmers have a role to play in reducing food security threats?

A small-scale farming community which merely replicates the existing industrialised farming system will not contribute much towards the reduction of food security threats. If conceptualised within a different and sustainable (agro-ecological) paradigm) then small scale farmers should provide the leading edge in reducing food security threats especially in a context of economic, political and environmental uncertainty.

Q Unprecedented demonstrations and uprisings have erupted around North Africa and the Arab world triggered by events in February in Tunisia when the President was forced into exile by a population provoked by unaffordable food among other issues including high unemployment. Do you think governments throughout the regions have to take care, monitor prices, and improve salaries to avoid the same thing happening to their countries, including SA, eventually?

Food riots and general unrest stimulated by collapsing living conditions are not new to the African continent and will certainly continue into the future. Unemployment, social exclusion, the collapse of rural economies, poor governance, inappropriate policies, the inability to adapt to changing conditions, and a host of other factors all contribute to situations where citizens are unable to access food. Clearly the current developmental model (including its agricultural components) pursued by most governments is not appropriate or providing the necessary

framework for a genuinely sustainable society. Taking care, monitoring prices and improving salaries will therefore be nothing more than stop-gap measures when more fundamental reforms are required.

Q Do you think soaring food prices could trigger war or conflict over the race for scarce resources and could the lack of food security become a serious threat to world peace generally?

This has certainly been the case for oil (crucial to contemporary food production) yet as long as the globalised elite can continue to access food made available by the sophisticated networks of trans-national agro-corporations, unrest over food prices will in all likelihood continue to be a national concern, but will probably not threaten world peace in the near future. Yet with our food production so intimately tied into the consumption of oil it is only a matter of time before tractor wheels – so to speak – fall off.

It should however also be noted that scarcity is often a manufactured concept used to legitimise particular economic, political or development processes. There is enough food in the world yet the enormous wastefulness and inefficiency of the existing system contributes to periodic and localised shortfalls and increasing volatility in global prices. Currently only some 48 percent of the world's total grain production is directly consumed by humans, while 35 percent is fed to livestock, and 17 percent goes to biofuel production.

Global food security in its current manifestation is driven by low-priced industrial grains and oilseeds which in turn are subsidised by the externalisation of costs and access to relatively cheap oil. These grains and oilseeds are key to the production of meat, milk and eggs (animal-derived proteins) and the



“meatification” of diets which is considered to be a sign of progress and modernity. Yet many of these grains are also an important input into the production of biofuels giving rise to a situation in which the world’s 800 million or so motorists, who want to maintain their mobility, compete with the world’s poor for grain.

As the globalised elite demands greater access to animal-derived proteins and the right to automobility so more pressure will be put on grains on which the localised poor rely. In Belgium, for example, fodder crops for the livestock sector require some 2.5 million hectares which is 250 percent of the total available arable land inside Belgium. Were this model replicated around the world the concept of “sustainability” would certainly be taken to new heights of “greenspeak”.

Q What roles are global warming and climate change playing in food security?

Predictions suggest that some of the more impoverished areas of the world will be most affected by climate fluctuations thus exacerbating the downward spiral of already stressed rural economies. Ironically,

it is the industrial agricultural complex which itself is a major contributor to the generation of greenhouse gases and the subsequent fluctuations and changes in climate. This is not only due to the energy intensive inputs, the mechanisation of agriculture, or the “food miles” associated with many foodstuffs but also due to the large industrial livestock populations which are also a leading source of methane and nitrous oxide. Climate change optimists do, of course, argue that warmer conditions will open up many of the more temperate regions of the world which inadvertently re-emphasises the reality of, in this instance, Africa, continuing to be a net importer of food.

Q “Food prices will continue to spiral upward no matter who is governing. World leaders have known this for years but have done little to avert the crisis; rather they have made it worse by not investing sufficiently in agriculture.” What is your comment on this statement?

It is not so much that leaders have not invested in agriculture but that governments have supported a totally unsustainable agricultural sector. The challenge for governments

is to challenge the concept of modernity within a neo-conservative capitalist paradigm and to pave the way for a sustainable agricultural sector through the development of policies and support structures which embrace the concept of food sovereignty.

Q Is South Africa equipped to address food security and can it help its neighbours become more food secure?

South Africa has been totally seduced by the modernisation paradigm as propagated by the western industrialised countries with an emphasis on technology, technological (chemical) fixes, high energy inputs, monocultures, genetic engineering, the patenting of seeds, mechanisation, the industrialisation of livestock rearing, fast food and the “meatification” of diets.

The system as a whole is driven by a fossil fuel dependent paradigm which is not only unsustainable but also contributes to South Africa’s status as the highest emitter of greenhouse gases in Africa and one of the highest *per capita* emitters of greenhouse gases in the world. Since the 1970s *per capita* food production in South Africa has, due

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DR HARALD WITT

to a host of factors, been in decline and we have also shifted from being a net exporter to a net importer of food. South Africa's current agrarian model therefore has very little to offer in terms of a sustainable way forward especially in a context of climatic uncertainty and peak oil demand.

Q Is there anything the individual can do to lessen food security threats?

From a consumption perspective individuals should make informed choices as to what food/agricultural system they are supporting. Due to the interconnectedness of all things and the need for a holistic understanding of what food sovereignty (security) entails this does not only mean buying "organic" but also establishing a more intimate involvement with localised farming activities and by demanding food which – where possible – is produced according to agro-ecological principles, the humane treatment of animals and the fair treatment of workers. Consumers should support local farmers' markets and initiatives such as the Slow Food Movement and eat less animal-derived protein. All of us, regardless of where we live, can also contribute to the production of our own food be it in a simple window box, a roof garden, part of a communal plot and so on.

Q Because farmers are not subsidised in South Africa the agricultural sector faces huge challenges. Do you agree with this statement and should Government be playing a bigger role in assisting farmers?

It's not so much about subsidies but more about how the system is organised. Food retailers, distributors, importers and processors generate substantial profits from the sale of food and related products yet farmers, who bear the actual risk

of production, generally struggle to make ends meet. Government should certainly play a role in assisting farmers yet this assistance should come in the form of risk sharing, research into sustainable farming techniques and principles (agro-ecological farming), transportation, market infrastructure and so forth. Government policies should also establish policies which internalise production costs which are currently externalised by the industrial farming complex. Urban agriculture in its diverse forms should be promoted including policies on: water harvesting; the composting of all bio-matter including human waste; building codes which will facilitate the establishment of rooftop gardens; the encouragement of local markets; innovative food production techniques and so forth.

Q Is access to food mainly income dependent?

Yes, yet it need not be. In a market-driven economy where labour, land and food have been commodified, citizens have little or no agency in terms of accessing food without access to an income. In terms of food production, with no access to land or similar productive space, meaningful state support, some form of security and political commitment, citizens will be unable to produce food for subsistence and/or other purposes and will remain dependent on the market to secure an income and/or food. It is now commonly accepted that in a context of food surpluses many go hungry not because of crop failure, adverse climatic conditions, and so on but due to a lack of income and the destruction of bartering and other survivalist systems.

Q Food and being able to eat properly are going to be big political issues in the next decade. Do you agree with this statement?

Well-stocked supermarkets and endless clusters of fast food outlets propagate the myth that access to cheap food (due to the externalisation of costs) produced by an apparently efficient agricultural sector is the norm and will continue to be the norm in the near future. As with the climate change debate, there is recognition that there needs to be change yet governments and society at large are gripped by the convenience of inertia. As long as consumers remain alienated from production systems which are totally unsustainable, highly destructive, and inhumane there will be little concern for change. The myth of modernity in a South African context, for example, drives the consumption of highly nutritional traditional *imfinos* (green leafy crops) underground, or to the margins, and elevates the consumption of KFC (the meatification of diets) to an exalted status. Thus the political engagement with food will continue to be minimal.

Q How can the world's food supplies be secured?

Firstly, food needs to be considered as a source of nutrition and not as a tradeable commodity or source of fuel. Secondly, and on the production side, there needs to be a radical restructuring of agriculture if we are serious about securing the world's future food supplies. This should include the establishment of a small-scale, localised, diversified and labour intensive farming sector based on the implementation of agro-ecological principles and ethical farming practices and independent of fossil fuels. This restructuring will also require a different conceptualisation of productivity in which costs are not externalised and driven by a desire to build more socially just and humane society. **N**

AGRICULTURE IN SOUTH AFRICA IS FEELING THE HEAT OF CLIMATE CHANGE

*Climate change is a reality and will impact significantly on South Africa's food and water security in the future, maintains
Professor Roland Schulze, Emeritus
Professor of Hydrology at UKZN.*





AGRICULTURE IN SOUTH AFRICA IS FEELING THE HEAT OF CLIMATE CHANGE

Urgent action – a case of “adapt or fry” – is required by both public and private sectors to front up to the challenge and put in place measures that will lessen the impact.

This is according to Roland Schulze, Emeritus Professor of Hydrology and Senior Research Associate at UKZN.

‘Water – the lifeblood of agriculture – is a finite source and because of the physical environment in South Africa plus a lack of real urgency about preserving and conserving our supplies, resources in the country are under intense pressure.

‘The quality of our water is another area of concern as it is being threatened by a combination of factors including metals from mining, agricultural chemicals, acid atmospheric deposits, urban and industrial effluent and excessive sediments,’ said Schulze.

Against this concern was the fact that the country had a burgeoning population with rising food expectations while agriculture’s contribution to the Gross Domestic Product was dropping steadily. ‘The number of commercial farming units in South Africa is in steady decline. In 1996 there were around 60 000 commercial farming units, by 2002 this had decreased to about 45 000 and in 2007 the number was less than 40 000.

‘With further projected changes in global climates into the future, changes in the South African agriculture sector will be inevitable, especially since the regional climate in South Africa is dependent on the global climate, both today and in the future. No-one knows exactly how the future global climate will develop and what the resultant consequences in South Africa will be in, for example, the agriculture sector. However, South Africa lies in one of the regions of the world that is most vulnerable to climate variability and change.’

Impacts from a changing climate could be considerable with different regions of the country likely to be affected in many different ways, both positively and negatively. Changes in optimum growing areas and yields are anticipated and, with that, many knock-on effects ranging from application of new crop varieties to increased pest infestations to issues of food security and international trade.

‘One picture that is becoming more evident in South Africa is that things are not going to change equally. Projections are that the Western Cape will be hit harder than the rest of the country and that KZN will have more rain coupled with high temperatures producing positive and negative spin-offs for the province,’ said Schulze.

‘With projections that the Western Cape will experience less rain and higher temperatures there is cause for great concern for the agricultural sector there. The fresh fruit industry, especially apples, is threatened because a long term strategy is needed in that field. Fruit trees bear for many decades – it’s not like an annual crop such as wheat where if things go wrong climatically you can change to another annual crop such as sorghum crop the next year.’

While South Africa covered just four percent of the African continent, it had in recent years produced more than 30 percent of the continent’s maize, nearly 30 percent of its sugarcane, around 20 percent of its mutton and beef and three percent of its wheat, as well as being one of the world’s seven leading net exporters of food products.

Schulze said the country had a distinct dual agricultural economy comprising a well developed commercial sector which produced around 95 percent of the marketed agricultural output, and a predominantly subsistence-oriented sector residing mainly in what were, historically, the so-called “homelands”, although an emerging sector was now evolving out of the subsistence sector.

More than 80 percent of South Africa’s land surface could be classified semi-arid to arid, with only 18 percent being dry sub-humid to sub-humid. The potential for crop production was therefore limited.

In fact, of South Africa’s total surface area, only 13 percent could be used for arable crop production, and of that, only 22 percent had high potential. Less than 10 percent of the total arable land was under irrigation.

The most limiting factor in agriculture was available water. Rainfall was generally low and erratic for

‘The most limiting factor in agriculture is available water. Rainfall is generally low and erratic for rain-fed agriculture, while the relatively small irrigated sector uses 60 percent of South Africa’s stored water.’



Professor Roland Schulze

rain-fed agriculture, while the relatively small irrigated sector utilised 60 percent of South Africa’s stored water.

Schulze said countries such as China – facing water and food security problems of their own – were investing significantly in the African agricultural sector but this was seen in some quarters as “land grabbing” and “water grabbing”. ‘Chinese companies have invested heavily in the agricultural sector of countries such as Cameroon, Madagascar, Nigeria, Tanzania, Uganda and Zimbabwe getting involved in the production of crops including rice, sugarcane, corn as well as in the poultry industry.’

Growing crops to produce biofuels was also impacting on food and water security. One litre of biofuel required about the same amount of water as that needed every day by a human being.

What nature supplied in terms of water was far less than what crops in South Africa required in the drier areas, resulting in a large amount of irrigation there. This raises the question: Is the increase in agricultural yields through irrigation in dry areas worth the additional water needed?

Schulze said there was no doubt that climate change was impacting on agriculture in South Africa and the sector had to “adapt or fry”.

‘When managing agriculture under climate change, we deal with an uncertain atmospheric system being polluted with greenhouse gases from increasing industrialisation while a growing population puts

ever increasing demands on water, food and energy resources.’

Changes in the mean annual temperatures and annual rainfall in South Africa were projected to be significant and to become more pronounced between 2050 and 2090.

‘The increase in temperatures will increase evaporation from open water bodies including dams, rivers and wetlands inducing significant reductions in water levels. These changes will lead to changes in agricultural yields, and growing seasons for crops such as sorghum, soybeans, and sugarcane will vary.

‘Water security is vital for food security in our country and authorities need to take steps to safeguard and enhance supplies. These steps should include enhancing adaptive capacity through technology and structures such as storage and reticulation, desalination, flood/storm surge control, early warning systems, communication, water demand management and rain enhancement.’

What else can be done in the face of the threats from climate change?

‘Firstly, it is necessary to realise South Africa’s limits to adaption in the face of the changes. There are physical, financial, capacity and feasibility limits,’ said Schulze.

‘It is vitally important is for all sectors to work together – team work is essential.

‘In terms of securing food supplies, it is necessary to identify good agricultural areas in SA as well as

identifying where rain-fed agriculture cannot expand to because of climatic conditions.

‘We must recognise that change will be real and probably significant and implement coping strategies, reduce aggravation factors such as carbon emissions and improve the resilience of people and ecosystems. It is vital to create a more sustainable world... and we need to start now,’ said Schulze.

‘Government and the private sector must:

- invest in South Africa’s scientific capacity and grow centres of expertise;
- engage in communication between science and stake holders;
- facilitate lower bureaucratic overheads, work trans-nationally and simultaneously;
- encourage a multi-disciplinary approach;
- work towards smoothing policy, negotiation and partnerships.’ **N**

UKZN at the pulse of food sovereignty in Durban

A significant part of the answer to the problem of providing sufficient food for everyone – especially in less privileged communities – lies in the soil and in the hands of the people. The University of KwaZulu-Natal (UKZN) is in partnership with the eThekweni Municipality in operations at the Newlands-Mashu Permaculture Training Centre.

Irrrefutable evidence that the earth can – and will – provide bountiful sustenance if managed and worked correctly is displayed in vegetable gardens established by the eThekweni Municipality in a variety of areas in its 2 297 km² region in and around Durban.

These gardens, maintained by local people under the guidance of qualified horticulturists, are producing a variety of vegetables which not only feed the people, many of whom are poor, sick or unemployed, but also provide income earning potential.

Cabbages, sweet potatoes, tomatoes, spinach and chillies, among others, are thriving in small patches of land some of which are alongside main roads while others are deep in rural areas.

The University of KwaZulu-Natal (UKZN) is in partnership with the eThekweni Municipality in operations at the Newlands-Mashu Permaculture Training Centre – the demonstration and learning hub for the East agri-zone. The centre, in Newlands East, falls under the municipality's Agricultural Management Section (AMS) established in 2009 to promote agriculture within the region.

UKZN's Pollution Research Group (PRG) and eThekweni's Water and Sanitation Department (EWS) are working together on a project to process sewage from more than 80 homes in Newlands East to produce nutrient-rich water for use on the vegetable gardens.

Professor Chris Buckley of the PRG says trials are being conducted at the Newlands-Mashu centre to assess whether the water, once correctly treated, can be safely used for urban horticulture and sustainable community initiatives. Students and staff from UKZN's School of Chemical Engineering, particularly Dr Kitty Foxon and Mr Sudhir Pillay, have been involved in the research.

The PRG and EWS developed a partnership with the Bremen Overseas Research and Development Association (Borda) in Germany several years ago and this has led to the creation of an anaerobic baffled reactor system which treats sewage without the use of electricity and requires minimal maintenance.

A pilot Borda baffle reactor has been established at the Centre while a further four units are being constructed for use in informal settlements in other areas in the eThekweni region.

'Once the process has been finalised and water can be safely used on vegetables being grown in co-operative type gardens it will be of great benefit to the community and the environment as well as playing a role in improving the food security of the local people,' said Buckley.

Mr Lawrence Maduramuthu is the horticulturist in charge at the Newlands-Mashu hub which acts as a "show and tell" garden where people are trained in all aspects of growing veges.

'We also assist them to set up vegetable gardens in their area and go out to check on whether the land is suitable and also on the soil type and the supply of water. Without a good supply of water the growers have no chance of success. That is why UKZN's concept of using recycled sewage water is such a vital aspect,' said Maduramuthu.

The growers also get gardening tools and seeds while the land chosen for the gardens gets ploughed if necessary. Agricultural Management Section staff provide guidance on good growth techniques plus giving advice on issues such as pest problems or soil nutrient deficiencies.

'What we try hard to do is change the mindsets of the people from pro-



Horticulturist Lawrence Maduramuthu and eThekweni Extension Officer Lungile Dladla in spinach beds in Newlands East, Durban.

ducing for their own needs to producing for the market, eventually setting up their own small business and earning an income. It is very rewarding to see how some have progressed from almost nothing to running a thriving vegetable supply operation,' said Maduramuthu.

The participants get advice on market conditions such as what crops to grow and when.

Hundreds of vegetable gardens have been established since the project began in 2009 providing food production and income earning opportunities for thousands of people.

Maduramuthu said volunteers also worked in the gardens at the Newlands-Mashu centre. They were allowed to take home a bag full of produce each while the rest was given to feeding houses set up in containers where children, the elderly, sick and infirm could find food.

The vision of the AMS is food sovereignty for all eThekweni residents and a thriving urban and rural agriculture sector that significantly contributes to the health and well-being of all eThekweni residents; climate change mitigation and resilience and environmental sustainability.

The AMS also aims to promote food security and household food production, combat climate change, empower communities economically and encourage creativity and innovation in addressing constraints.

Other hubs include:

- the Northdene Agroecology Research and Development Centre
- Inchanga – North zone hub
- Scorpio Place in Mariannridge – Central zone hub
- Mariannhill Monastery
- Umbumbulu – South zone hub.

The AMS defines food sovereignty as: “the right of people and communities to have and produce safe, nutritious and culturally appropriate food and to define and control one’s own food production, distribution, and consumption to ensure these are appropriate to our unique ecological, social and economic circumstances.” It empowers local community food producers to have control over their land, water, seeds, livestock and biodiversity.

‘Food sovereignty prioritises local and national economies and markets and puts those who produce, distribute and consume food at the heart of the food systems and policies rather than the dictates of global markets and corporations.’ **N**





GM FOODS NOT THE SOLUTION TO FOOD SECURITY WOES, SAYS US REPORT

Genetically engineered (GE) crops are seen by some observers and commentators as having the potential to solve the world's food security situation but one study in the United States has found that genetic engineering has done little to increase crop yields.

A report titled: *Failure to Yield. Evaluating the Performance of Genetically Engineered Crops* by the Union of Concerned Scientists – a leading science-based non-profit organisation working for a healthy environment – said after two years of research and 13 years of commercialism, a hard nosed assessment of genetic engineering's achievements to date gave little reason for confidence that genetic engineering would play a major role in helping the world feed itself in the foreseeable future.

So exactly what are genetically modified organisms (GMOs) and GM foods? One source describes GMOs as organisms in which the genetic material (DNA) has been altered in a way that it does not occur naturally with the technology used allowing selected genes to be transferred from one organism into another and also between non-related species.

These methods are used to create GM plants producing GM food crops. The perceived advantage of genetic engineering is an increased level of crop protection through the introduction of resistance against plant diseases caused by insects or viruses or through increased tolerance to herbicides.

There is a concern about the risk to human health and the environment posed by GM foods.

The US report says it is time to look more seriously at other tools in agriculture's tool kit. 'While GE has received most of the attention, and investment, traditional breeding has been delivering the goods in the all important area of increasing intrinsic yield. Newer and sophisticated breeding methods using increasing genomic knowledge – but not GE – show promise for increasing yields.

'It is very important to compare the potential contributions of GE with those of other approaches such as organic methods, low input methods and enhanced conventional breeding methods,' according to the report.

'Where these alternatives look more promising, we should provide sufficient public funding to ensure they will be available. Such prioritisation is especially appropriate for research aimed at developing countries where yield increases are most needed.

'The burgeoning human population challenges agriculture to come up with new tools to increase crop productivity. At the same time we must not simply produce more food at the

expense of clean air, water, soil and a stable climate which future generations will also require. In order to invest wisely in the future, we must evaluate agricultural tools to see which ones hold the most promise for increasing intrinsic and operational yields and providing other resource benefits,' states the report.

Among the recommendations the report makes are:

- 'Food-aid organisations should work with farmers in developing countries where increasing local levels of food production is an urgent priority to make those more promising and affordable methods available.
- 'Relevant regulatory agencies should develop and implement techniques to better identify and evaluate potentially harmful side effects of the newer and more complex genetically-engineered crops. These effects are likely to become more prevalent, and current regulations are too weak to detect them reliably and prevent them from occurring.' **N**

RESEARCH



Above: Head of the Pollution Research Group at the UKZN, Professor Chris Buckley (right), and Senior Research Fellow at the Group, Chris Brouckaert on new age toilets.

Securing the Future of Durban's Water

The Pollution Research Group (PRG) at the University of KwaZulu-Natal (UKZN) has many sanitation successes under its belt.

GREG DARDAGAN

Water, water, everywhere;
Nor a drop to drink." These immortal lines from *The Rime of the Ancient Mariner* by 18th century poet Samuel Taylor Coleridge could be relevant for a future Durban.

Whereas Coleridge echoes the cry of sailors aboard a becalmed ship with oceans of water around them but none of it potable, Durban's lament would be about the abundance of water in our rivers and dams but so polluted we can't drink it!

However, there are forces at work to arrest the tide and make polluted water crystal clear – among

them the Pollution Research Group (PRG) at UKZN which already has many sanitation successes under its belt.

The forecast of PRG's head, Professor Chris Buckley, is that recycled sewage water will be running through our taps within the next five years... and it will be safe for drinking!



‘It’s what’s happening in drought-ravaged Beaufort West right now and Windhoek in Namibia has been doing it for years. No reason for us not to have a similar situation here. Critical is the need to develop a fail-safe system – there’s very little room for error. Hence the need for intensive research,’ said Buckley.

The PRG, a self-funded contract research group within the Department of Chemical Engineering at UKZN, researches the recycling of water and the recovery of chemicals with the current focus being on urban and industrial water management.

Special attention is being given to urine diversion toilets, community ablution blocks and anaerobic baffled reactors.

Buckley (62) is the ideal man to lead the PRG – his entire career has been involved with finding the most effective use of water through research, education and development. Born in the United Kingdom, his family emigrated to South Africa and settled in Durban when he was about four-years old. Through school he developed a love for the sciences gaining a Durban Corporation bursary-loan in 1966 to study chemical engineering at the then University of Natal.

That started a 45-year journey through the University in which he progressed from a student to an internationally renowned researcher in water sanitation speaking at numerous high level forums throughout the world every year.

‘The bursary gave me exposure to water and wastewater issues in Dur-

ban. From my early years I had an interest in water, filtration and separation and furthered that through funding from the Water Research Commission which continues to fund the group to this day,’ said Buckley.

The group’s most recent success was to be one of only eight institutions worldwide chosen through the Bill & Melinda Gates Foundation to reinvent the toilet. ‘Last year the Gates Foundation sent out a challenge to develop new age loos. The PRG put in a proposal and included as our partners all the people we have worked with in establishing our knowledge including eThekweni Water and Sanitation, the Water Research Commission, Partners in Development, EnviroSan, Hering and Energy Engineering International.’ **N**

Exciting Times ahead for Mathematics

*Mathematics, pure and applied is fundamental to the way we think. It is within this world of symmetry and logic, "brain games" if you like that UKZN's **Professor Kesh Govinder** is trying to foster a following among young scholars.*

LIZ CLARKE

U KZN's acting head of mathematical sciences, Professor Kesh Govinder believes that mathematics is more than an academic pursuit – it is a life science that needs to be promoted at every level of learning.

'Perhaps the first thing that needs to be dispelled among young students is that mathematics is only about numbers,' he says. 'It isn't. Far from it, it is about how we train our brains to set about problem solving and finding rational, logical and creative ways to reach a solution. It is a paradigm that fits every facet of our lives.'

Maths, as we know, is the 'queen and servant of the sciences', an integral part, he says of training people how to think critically.

'They often say that mathematicians are trouble-makers,' he laughs. 'That's because their brains are trained to undertake stringent analyses of issues and statements that are hard to disprove.'

It is this deep passion for intense mathematical concepts that has

convinced Govinder that more needs to be done to persuade young learners to pursue mathematics – on the higher grade at school and later not to give up at honours or masters level at University – but to carry through to a PhD.

'I say to my honours students why give up half way. If mathematics, both pure and applied, is worth the academic investment, why not carry on the end of the journey? – and what a journey it is.' He also is a strong advocate of students – whatever their discipline – taking mathematics up to matric as a fundamental platform for higher learning.

However, he cautioned 'my big concern is that because of the teacher shortage matric students are sometimes taught by people who have limited mathematical skills. If the teachers themselves are not equipped with a working knowledge of mathematics, how can we expect better results?'

As a spin-off from these concerns, Govinder and his department have embarked on a number of outreach projects, not only to identify promising students at school level, but also

to upgrade the skills of mathematics teachers.

He is convinced that even first year mathematics is sufficient for teachers to instruct up to matric level and is equally convinced that this would be a sound way for the country to develop a solid science platform. This, he believes, would be in line with the Science and Technology Minister, Naledi Pandor's views and the recognition that boosting mathematical sciences is the impetus needed to transform societies.

Another endeavour that is 'starting to make a difference' says Govinder is the UKZN Academic Support Programme, which encourages students to share curriculum or study problems with a number of dedicated tutors on a one-on-one basis.

'In an exact discipline like this, it is important that students have a back-up network, so that any lack of understanding, can be identified and dealt with as soon as possible.'

He said that while many talk about right and left brained people, research has established that a grasp of mathematical principles is not the

'You only have to look at the music of Bach and its mathematical symmetry to understand that a cross-over between art and science exists.'



EXCITING TIMES AHEAD FOR MATHEMATICS

PROFESSOR KESH GOVINDER

sole priority of either side of the brain, but straddles both.

‘There is a creative side to mathematics, so whether you are left or right brained is not an issue.

‘You only have to look at the music of Bach and its mathematical symmetry to understand that a cross-over between art and science exists.’

Research outcomes such as these are very much in line with the investigative initiatives undertaken at UKZN, Govinder explained.

‘To ensure standards are maintained,’ he said. ‘We need data which monitors learning systems, and in what areas they succeed or fail.’

To this end UKZN’s Maths Education Research Group was monitoring these aspects and will be using their fundings to positively impact curricula and teaching techniques.

And what of the future? Where will mathematical sciences take us next?

Govinder doesn’t hesitate – ‘astronomy/astrophysics and mathematical biology.’

It is within this sector that the next generation of applied mathematicians will be creating mathematical models for the biosciences and space exploration.

‘Whether it is in bioinformatics or medical research, mathematical tools that are universally applicable are going to be an essential part of streamlining and consolidating our understanding of everything from the genome to cellular structure, from black holes to outer space.’

Next year an international workshop on biomathematics will be held in South Africa. In that context Govinder believes that the South African Research Chairs Initiative (SARChI) created recently will strengthen scientific research leadership and capacity in South African universities. ‘We are living in very exciting times,’ he says.

It’s about pioneering the new frontiers of science, says Govinder, and at the very heart of this cutting-edge research is the world of relativistic astrophysics and astronomy, which forms an integral part of the School’s work.

Think, not just of new planets and star trek but entirely new states of matter that we never knew existed, says Govinder. It’s about new phenomena in the universe – opening up perhaps novel mathematical platforms that take us to an entirely new frontier.

Throw into this mathematical mix the big bang, the formation of exotic stars, black holes and the plasma of quarks and gluons by heavy ion reactions, the influence of dark matter and dark energy in the evolution of the universe, and one can see that as Govinder puts it – we’re really just at the beginning of this new age of mathematical exploration.

The UKZN School of Mathematical Sciences divides its curriculum between pure maths which underlies all scientific applications involving deep mathematical theories sometimes developed for their own sake and applied maths that concerns itself with mathematical methods used in all branches of science, engineering, and business.

Currently there are 40 mathematics students studying at masters and PhD levels at UKZN. **N**

**$ax^2 + c$
= music**



*Professor Sunil Maharaj -
Astrophysics and Cosmology*

Opening up new frontiers

UKZN's Astrophysics and Cosmology Research Unit has the largest grouping of cosmologists and astrophysicists in the country.

OPENING UP NEW FRONTIERS

ASTROPHYSICS AND COSMOLOGY RESEARCH UNIT

LIZ CLARKE

The sub atomic spheres of particle physics, red shift and the conundrums posed by the string theory are not the kind of issues that play themselves out in the ordinary world.

Yet the growing understanding of these fundamental concepts will inevitably change the knowledge we have of space and time, even question Einstein's relativistic model of the universe.

Maharaj is proud of the fact that UKZN has the largest grouping of cosmologists and astrophysicists in the country and has recently established an outreach programme with a fulltime outreach officer.

The programme involves science workshops at school level with an emphasis on space exploration, understanding the southern hemisphere star systems and encouraging grade 11 and 12 students to study cosmology and astrophysics at UKZN.

The University's new Science Centre, which is visited regularly by

Cosmology, as Maharaj explains is for the most part about conjecture – whether it involves the Big Bang or the so-called expanding universe.

'In this branch of research we have to employ many avenues including particle physics, the string theory, astrophysics, general relativity, and plasma physics.'

He says what makes him so passionate about the subject is that there is no end to the learning.

'We will never know everything, but striving to grasp just small strands of

'It's about inspiring young people to first take an interest in the stars and planets and then to embrace the idea of tackling new frontiers in space exploration and the dynamic theories that have the potential to change the way humankind thinks.'

Immersed in this vigorous academic debate is Professor Sunil Maharaj, who heads UKZN's Astrophysics and Cosmology Research Unit.

A mathematician and astrophysicist, he believes that appealing to young minds to explore and study the extraordinary dimensions of our universe, the academic and practical opportunities it offers, has to be a priority.

'We are very fortunate to live in a country that recognises the value of scientific research and is prepared to make funding available,' he says.

'It's about inspiring young people to first take an interest in the stars and planets and then to embrace the idea of tackling new frontiers in space exploration and the dynamic theories that have the potential to change the way humankind thinks.'

schools in the province, he said, had also done wonders for raising awareness and interest in mathematical sciences. Currently the Department has 15 post graduate students, including eight who are working on Masters degrees and three involved in post doctoral research into a number of space related subjects.

'Our academic structure has basically two elements,' explains Maharaj. 'The one deals with the theoretical models used to understand the universe and the systems of galaxies and their formation. The other has a more practical application, which focuses on data collection from space exploration, the nature and development of telescopes, including South Africa's SALT telescope at Sutherland and the evolving international Square Kilometre Array (SKA) telescope system that is being developed and supported by South Africa.'

new knowledge is an overwhelming thought. We know that the answers are out there. It's up to scientists like ourselves to find those answers and if possible solve some of the billion-year-old mysteries.'

Perhaps one of the most intriguing of all contemporary scientific quandaries is the comparative study of big things and those at sub atomic levels where the location and energy of particles cannot be known and have an inherent degree of uncertainty.

'The known Einstein theories on relativity don't appear to correlate with the behaviour of particles at a sub atomic level,' explains Maharaj. 'We don't yet know if there is a super symmetry involved that is beyond anything we know now. You could say it is the holy grail of current cosmic research. If man is to go further into space – to Mars and beyond our own galaxy, these areas of research are critical.'





UKZN leads the way in treatment of HIV and TB co-infection

South Africa is at the international forefront in the treatment of HIV/Aids and tuberculosis (TB) thanks to ongoing successful research by UKZN's Centre for the AIDS Programme of Research in South Africa (CAPRISA).

GREG DARDAGAN

It is estimated that implementation of the results of the CAPRISA study on integrating AIDS and TB treatment could avert about 10 000 deaths each year in South Africa alone.

Treatment of the combined dreaded diseases has been recently changed globally, in keeping with new World Health Organization (WHO) guidelines, which are based on the results of CAPRISA research.

Professor Salim Abdool Karim, UKZN Pro Vice-Chancellor (Research) and CAPRISA's director, explained that the latest WHO, USA

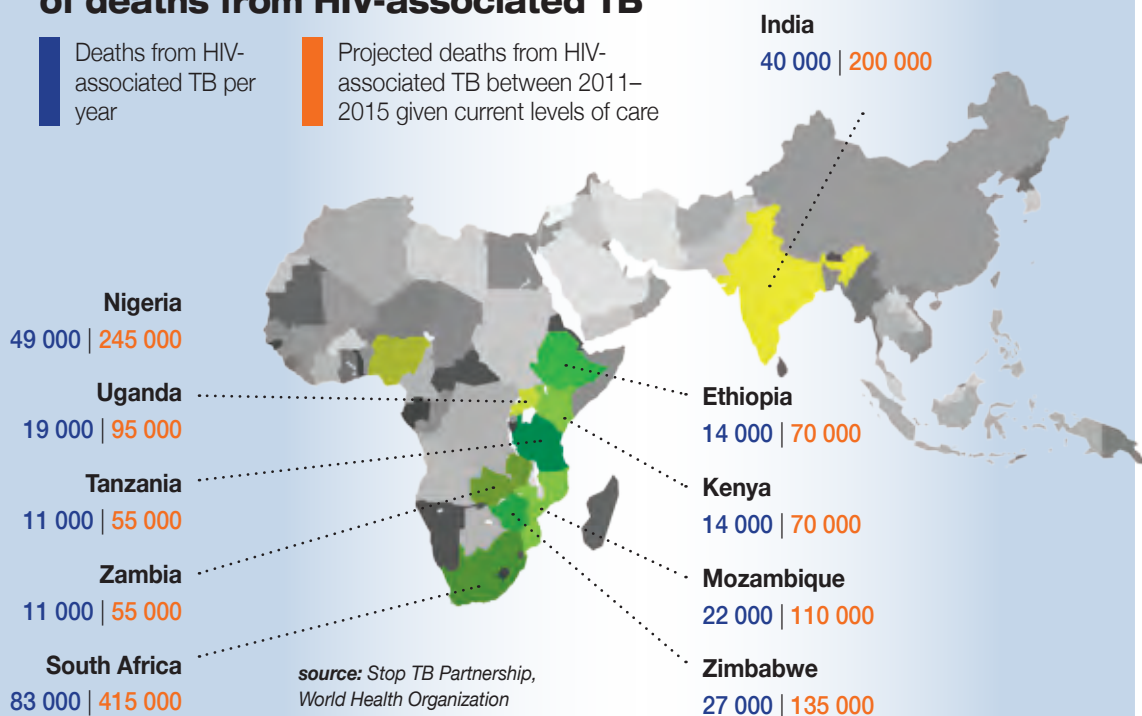
and South African guidelines and/or policies draw upon the findings of the CAPRISA 003 (SAPiT – Starting ART at 3 Points in TB) trial. The results of this clinical study, published in the New England Journal of Medicine, showed that the initiation of antiretroviral therapy during TB therapy significantly improved survival. It has provided newfound impetus for the integration of TB and HIV services.

In this open label, controlled trial in Durban, CAPRISA randomized 642 patients with TB and HIV infection to initiate antiretroviral therapy during TB therapy in two (early- and late-integrated) integrated therapy groups or after the completion of TB treatment in a sequential therapy group.

'Ambulatory TB patients with HIV infection and a CD4+ cell count of less than 500 cubic millimeters were included. All patients received standard tuberculosis therapy, prophylaxis with trimethoprim-sulamethoxazole, and a once-daily antiretroviral regimen of didanosine, lamivudine and efavirenz. The primary end point in the trial was AIDS defining illnesses and death from any cause,' said Abdool Karim.

There were substantially fewer deaths (n=25) among the 429 patients in the combined integrated-therapy groups (5.4 deaths per 100 person-years) compared with the 27 deaths among the 213 patients in the sequential-therapy group (12.1 per 100 person-years) where antiretroviral therapy was initiated after the

Countries with the highest number of deaths from HIV-associated TB



completion of TB therapy. This is a 56% reduction (95% confidence interval: 0.25 to 0.79; $P=0.003$).

‘Mortality was lower in the combined integrated-therapy groups in all CD4+ count strata. Rates of adverse events during follow-up were similar in the two study groups. Since many of the deaths occurred after the completion of TB treatment, the providers of TB care were unaware of the benefits of co-therapy of TB and HIV infection,’ said Abdool Karim. ‘The initiation of antiretroviral therapy during TB treatment significantly improved survival. So, the next question is: When, during TB treatment, should antiretrovirals be initiated?’ he said.

The most recent SApiT study data provided the critical evidence needed by clinicians to weigh the risks and benefits in determining whether to initiate antiretrovirals immediately with TB treatment or to delay antiretroviral therapy initiation by 8 weeks to reduce the risk of immune reconstitution (paradoxical clinical deterioration despite biological improvement) and drug switches. ‘In severely immune-compromised patients, with CD4+ cell counts below 50, immediate antiretroviral

initiation reduces the risk of AIDS and death. However, in patients with higher CD4+ cell counts, there is no apparent survival benefit from immediate antiretroviral therapy but this approach carries an increased risk of immune reconstitution and the need for antiretroviral drug switches,’ said Abdool Karim.

The higher incidence of immune reconstitution in patients who started antiretroviral therapy early during their TB treatment is particularly significant since the patients had a more severe form of immune reconstitution which had a longer duration and required hospitalisation more often.

In his recent articles in the Lancet, Abdool Karim explains that South Africa has the world’s worst HIV and TB epidemics with indications that both epidemics are likely to continue to worsen, leading to substantial increases in deaths and disability. ‘The concomitant epidemics have exacerbated each other and have been further compounded by an increase in MDR tuberculosis and the emergence of the almost incurable XDR strain. Optimal timing of ART initiation in TB patients has the potential to have a huge impact on survival due to the scale of the co-infection.’

Abdool Karim said the findings of the research provided compelling evidence of the benefit of initiating antiretroviral therapy during tuberculosis therapy in patients with HIV co-infection. ‘One of the most important points to emerge from the SApiT trial is the benefits of integrated TB and HIV care. The findings strongly support recommendations by the World Health Organisation calling for the integration of TB and HIV care.’ **N**



Professor Salim Abdool Karim

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Professor Deresh Ramjugernath

Fluorochemicals add value to South Africa's Fortunes

From refrigerants to pharmaceuticals, cookware to agrochemicals, products and processes using fluorochemicals account for around R17 billion dollars in global trade annually.



LIZ CLARKE

South Africa has the second largest reserves of natural calcium fluoride (the starting material for all fluorochemicals) in the world accounting for around 30 percent of the known reserves.

And yet despite these two scenarios South Africa does not benefit as much it could from these naturally occurring mineral reserves.

Professor Deresh Ramjugernath, who holds the DST/NRF South African Research Chair in Fluorine Process Engineering and Separation Technology at UKZN and heads the University's Thermodynamics Research Unit, says that the status quo needs to change.

'We were reaping very little benefit from this massive global trade – perhaps a fraction of one percent, even though we are the world's main exporters of the raw product.'

The situation is similar, he says, to the copper industry in Zambia. The copper produced at the mines was exported as a raw product, which meant that the country did not benefit from the manufacturing of copper-based products.

As a result of this trade imbalance, industry leaders and government, he explains, decided it was time to consolidate South Africa's position in the global market and developed a strategy to benefit the material which culminated in the Fluorochemical Expansion Initiative (FEI).

'So instead of exporting the raw materials and then importing the refined chemical products at very large expense,' he says, 'the focus switched to research and development on beneficiation and value chain development on home ground.'

To this end the Research Chair, currently headed by Ramjugernath,

was created to look specifically at how this new and emerging industry could be set up in a way that would benefit South Africa from the perspective of job creation and local and foreign trade.

One of the areas of interest, he points out, is in the pharmaceutical industry, which uses fluorochemical components as syntons for many of its products, which include antiretrovirals and TB drugs.

'If we could reduce the price of pharmaceuticals by developing our own drug component industry, this would have profound benefits, especially

living in resource poor areas like the North West Province where large deposits of calcium fluoride are located.'

One of the most significant developments, believes Ramjugernath, is Lonza's partnership with the South African fluorochemical leader Pelchem, a division of the Nuclear Energy Consortium of South Africa (NECSA).

Pelchem, situated 30 km west of Pretoria is a world-class fluorine production facility, which currently produces a range of speciality inorganic and organic fluoride gases and liquids as

'We were reaping very little benefit from this massive global trade – perhaps a fraction of one percent, even though we are the world's main exporters of the raw product.'

in the light of the country's new National Health Insurance scheme,' believes Ramjugernath.

The groundwork is well underway, he says, with a joint Swiss-South African science and technology co-operation agreement established with the Head of the Swiss Federal Department of Home Affairs, H E Didier. As part of this initiative, headed by Department of Science and Technology Minister, Naledi Pandor, Lonza, a Swiss pharmaceutical and biotech company headquartered in Basel has indicated its intention of locating some of its high-tech R & D and manufacturing capacity to South Africa.

'It is these international private enterprise collaborations that are going to make the difference,' says Ramjugernath. 'Within five years South Africa could emerge as one of the world leaders in this type of technology with the potential to create large scale employment for South Africans

well as organic fluorochemicals from tetrafluoroethylene.

According to Pelchem currently more than 70 percent of the raw chemical product is exported and used in the global manufacture of a number of strategic products. These include chemicals used in the agrochemical, petrochemical, detergent, metallurgical, semi conductor, and water treatment sectors.

'With this potential I think there are very interesting times ahead,' says Ramjugernath. 'We are at the beginning of an industrial journey that could transform our chemical manufacturing sector. To be part of this journey is very exciting.'

The initial emphasis will be to set up chemical plants, probably near to the Pelchem facility, where fluorochemical components will be used to produce the intermediate components and syntons in pharmaceutical active ingredient manufacture. **N**



Sibeko will study towards a PhD in Mucosal Immunology of the female reproductive tract to obtain the skill and tools needed to pursue a career focused on improving women's health by biomedical HIV preventive strategies at global health level.

She is currently the Protocol Co-chair and Co-Principal Investigator for CAPRISA's Acute HIV Infection and TRAPS (Tenofovir gel research for advancing HIV prevention science), and a part-time consultant at the Mahatma Gandhi Memorial Hospital in Phoenix, Durban.

The Nuffield Medical Fellowships at Oxford was created in June 1938 when philanthropist and founder of the Morris car empire, Lord Nuffield (born William Morris) gave a substantial amount of money to the University. The Fellowship allows scholars from Australia, New Zealand and South Africa to study post-graduate medicine at Oxford.

Dr with a Mission

Liz Clarke meets a young KZN doctor with a mission to research and develop life-saving HIV prevention treatment for vulnerable women on a global level.

If I can do it, so can you. That is the philosophy of Sengeziwe Sibeko, who is happy to tell you that she had no fancy schooling, spent her young life in a township and yet has achieved academic heights that few could dream of.

A qualified gynaecologist who completed her post doctoral degree at UKZN in 2005, she has an MSc in epidemiology from the University of Columbia, Mailman School of Public Health, and will soon be taking up a three-year prestigious post-

doctoral Oxford Nuffield Medical Fellowship (ONMF) to study towards her PhD at Oxford University.

'Not bad for a girl from Umlazi!' she says with a grin at the start of our interview.

You have to add, she points out, 'that I have a loving and supportive family who believed in the concept of working hard to achieve what you want.'

And if anyone has learnt that passion and commitment are the driving forces that will get you on the journey to excellence it is this energised and forthright 37-year old, who says the learning has become more than a mission. 'It is a way of life.'

It was as a matric student that Sibeko decided that after spending her young life at a rural black boarding school, Montebello, she would take up an offer to do a post-matric year at the exclusive Hilton College.



'I did communication and speech and drama for the year and loved it. I still do,' she laughs. 'I love public speaking especially when it's my own pet subject. If it is an international stage, all the better.'

It was also Sibeko who decided to forego private practice, in order to follow the simple message of doing something worthwhile for the community.

That 'something worthwhile' was to go right back to the basics and follow a research-intensive road that would satisfy her yearning to understand more about women's reproductive health.

'Frankly this whole HIV issue has, you could say, consumed me. To see so many young women dying, sometimes unnecessarily, people that I know, patients that I counselled, convinced me that I had to try in whatever way I could, to find

meaningful answers and meaningful ways to emancipate women from this burden of disease. If it meant becoming a student again then I was happy to do that.'

She said that the prevalence of HIV/AIDS among pregnant women, estimated at approximately 30% in the local setting, made it apparent that waiting to treat the already affected women, one at a time was no longer adequate.

'It was like swimming against a tsunami. The huge numbers of affected women and children that I was seeing in a hospital setting haunted me. We needed some fundamental answers on how to go forward with this terrible disease and come up with some primary HIV preventive methods at public health level.'

A number of prestigious Fellowships in South Africa and the US paved the way to her participating in the

historical and ground-breaking CAPRISA 004 micobicide study, a phase IIB trial of 1% tenofovir gel applied intravaginally for prevention of HIV. When this trial, hailed as the first of its kind globally, showed a 39% protective level of reducing the risk of HIV infection in women, she was convinced she had made the right decision.

She says being involved from the beginning of the Durban trial 'has to be every scientist's dream. I was so lucky to be in the right place at the right time.'

With the mentorship, she says of some of the world's top HIV scientists, she saw the process through right from the very start to the final stages.

'I like to think of it as my baby having been the overall gynaecologist of this study!'

DR WITH A MISSION

DR SENGEZIWE SIBEKO

The next stage, she says is the registration and license of the microbicide product for general use and she recently returned from the IAS conference in Rome, where she participated in panel discussions on 'proof to delivery' giving the South African perspective on readiness for drug delivery to women.

The excitement about microbicides, she says, is growing worldwide.

'A confirmatory trial, FACTS 001, which involves testing the same dosing strategy used in CAP 004 is now taking place in South Africa.'

A second CAPRISA study (008) is planned that will test the roll-out of tenofovir gel through family planning clinics in KwaZulu-Natal, examining the feasibility and acceptability of providing a microbicide through existing health services that target sexually active women.

If these trials are successful, the first tenofovir-containing microbicide could receive regulatory approval around the end of 2013.

'Then we have to wait and see,' she says philosophically. 'The extent of demand for the microbicide is still unclear. We know that using the

gel will reduce the risk of infection in women by 39 percent. But in the end it will be the take-up by vulnerable women that will tell the final story.'

When it comes to understanding the pathogenesis of HIV and its myriad of research conundrums, 'there's so much to do, you dare not think about it.'

The ONMF will give Sibeko an opportunity to conduct research at Oxford University aimed at understanding mucosal immunity against HIV in the female reproductive tract. She will focus on how HIV is transmitted across the mucosa from the lumen to the systemic circulation. This study, she says, would identify targets and opportunities for microbicides that work at this level to prevent HIV infection.

As an obstetrician, another area of research interest for Sibeko is the in utero effect, if any, that the microbicide gel will have on pregnancy and the safety of the unborn child. 'We don't know that as yet,' says Sibeko. 'The trial volunteers that we used to test the microbicide gel were not pregnant, so we have no reliable data for pregnant women. It is also possible that we may con-

duct trials amongst school children to see whether the HIV rate can be reduced in this younger age group. 'That's why we say there is still so much we need to know.'

Besides her involvement in microbicide research, Sibeko is currently the principal investigator of a research project that seeks to understand the biological mechanisms that mediate the association between hormonal use and HIV infection, which is conducted with the Department of Virology at the University of Cape Town.

She believes that the laboratory training at Oxford, plus the trials she will be involved in, will give her a greater understanding about the design of clinical trials, data analyses and interpretation of laboratory experiments and data generated.

Discovery Health have awarded her financial backing for her overseas posting.

'One day I want to come back to South Africa with all this knowledge,' says Sibeko. 'I want to help beat this thing called HIV/AIDS.'

N

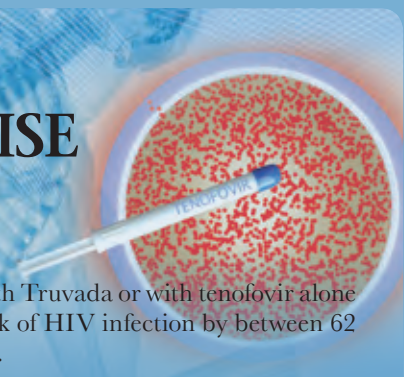
OTHER MICROBICIDE STUDIES SHOWING PROMISE

The iPrEx study showed that taking the anti-retroviral combination Truvada (tenofovir and emtricitabine – also known as FTC) reduced the risk of HIV infection in men who have sex with men by 44 percent.

The HPTN 052 study showed that early treatment reduced the risk of HIV transmission to an uninfected regular partner by at least 96 percent. The Partners study showed pre-exposure

prophylaxis with Truvada or with tenofovir alone reduced the risk of HIV infection by between 62 and 73 percent.

The TDF2 study showed that pre-exposure prophylaxis with Truvada reduced the risk of infection by between 62 and 78 percent.





New Chair in Industrial Studies

A new Chair in Industrial Studies was launched by the School of Development Studies. Adjunct Associate Professor, Justin Barnes who is an expert in the field of Industrial Development, took up this position earlier this year.

LUNGA MEMELA

It is the express desire of the School of Development Studies to positively contribute to the realisation of the abundant industrial development opportunities that exist both locally and across the African continent, and we believe that the appointment of Professor Barnes will act as a catalyst to the realisation of these broader objectives,' said Senior Professor in the School, Professor Vishnu Padayachee.

Barnes is the Chairman of Benchmarking and Manufacturing Analysts which provides services to a number of successful industrial clusters across the country. He has written numerous reports and academic journal articles, and contributed to the formation of national government policies pertaining particularly to the automotive and clothing and textile sectors.

The School of Development Studies Board created the Chair in recognition of the importance of industrial development to the broader development of the national and sub-Saharan African economy. Speaking at the launch, Padayachee said, 'This is the first of what will be an annual event, with the intention of bringing over an international expert to engage the academic and broader business community on development opportunities for our industrial base.'

'It is very refreshing and rewarding to have returned to the School and to contribute to its academic devel-

opment,' said Barnes. Focusing on some of South Africa's development challenges he outlined the link between production and consumption, and redistribution and growth, along with sustainability and the need to understand competitiveness issues within South Africa and abroad.

He highlighted the need to understand global value chains, trade relationships, industrial policies, local business systems, industrial clustering, firm-level organisational competitiveness and the importance of learning people skills in industry.

'We have got to grow our industrial capabilities. The objective is to remain at the forefront of industrial studies,' said Barnes. He said that it was fitting that the Chair was established at UKZN as KwaZulu-Natal is an industrial province, and South Africa is Africa's industrial powerhouse. 'The School of Development Studies needs a very strong industrial leg,' said Barnes. He identified key industrial sectors as central determinants of South Africa's development success or failure.

Barnes singled out the following challenges: the need to put growth and production on the South African development challenge map; building a new wave of industrial development students, academics and practitioners in the province; the need to engage and positively inform industrial policy development in KwaZulu-Natal, South Africa and the sub-continent; and supporting the private sector in the development of its industrial capabilities.

Acclaimed expert on the global automotive industry, Dr Timothy Sturgeon, gave a presentation on the effects of the global crisis on the automotive industry in developing countries at the launch.

Sturgeon is a Senior Research Affiliate at the Industrial Performance Center at the Massachusetts Institute of Technology and co-organiser of the Global Value Chains Initiative. He spent a week working with Barnes on local and global matters before the launch of the Chair, and said he was very impressed with Barnes' 'world-class standards'.

Noting how development has changed over the decades, Sturgeon depicted cross-cutting trends that have led us to the current global situation, including factors such as increasing services trade, increased outsourcing, formalisation and segmentation of work tasks, and the rise of a new, global-scale supply base. He spoke about the evolution of global industries and the rise of global value chains (GVC). 'The GVC framework is an overarching rubric that can help to tie these trends together. There seems to be a space opening up for industrial policy in the country,' he said.

He proposed six options for South Africa's automotive industry which prompted a healthy discussion among the academics, industry representatives and government officials attending the launch. **N**

UKZN Women Scientists Scoop National Awards

Six women scientists at UKZN scooped several national awards in various categories at the prestigious annual Department of Science and Technology's Women in Science Awards. The announcement was made by Minister of Science and Technology, Naledi Pandor for outstanding scientific contributions to advance science and build the knowledge base in their respective disciplines.

AWARDS IN THE FOLLOWING CATEGORIES WERE MADE TO:

- **Professor Quarraisha Abdool Karim**, the winner of the *Distinguished Women in Science: Life, Natural and Engineering Sciences Award*. Professor Abdool Karim is an internationally recognised expert on HIV and AIDS.
- **Associate Professor Deevia Bhana** the second runner-up in the *Distinguished Women in Science: Social Sciences and Humanities category*. Professor Bhana is both nationally and internationally regarded as a pioneer in the field of South African schooling and childhood sexualities.
- *The Distinguished Young Women in Science: Social Sciences and Humanities Award* was awarded to **Associate Professor Pearl Sithole** for her sustained contribution in the areas of gender and development, traditional governance systems and the politics of knowledge production.
- *Doctoral Fellowships* were awarded to **Ms Tricia Naicker** whose research focuses on the synthesis of novel chiral catalysts which play a vital role in the synthesis of all new and existing drugs, and **Ms Karen Pillay** whose research interest is in amyloid diseases, in particular type II diabetes.
- **Ms Anna Zawilska** who obtained her BSc in Electronic Engineering *summa cum laude* at UKZN last year received the *Masters Fellowship*. She is currently working towards her MSc at UKZN in the field of digital image stenography.

The awards are aimed at profiling women scientists and researchers as role models for younger scientists and researchers; and encourage and reward younger women who are starting their careers as emerging researchers and scientists. UKZN Vice-Chancellor, Professor Malegapuru Makgoba said, 'These awards recognise and inspire exceptional individual scholars for exceptional deeds and achievements. We at UKZN are proud to have such a diversity of talented women scholars. It bodes well for our students and staff. On behalf of the University we salute them.'



Professor Quarraisha Abdool Karim

Professor Quarraisha Abdool Karim, has in the past two decades committed her professional career to stopping the spread of HIV in South Africa. As a principal researcher in the CAPRISA 004 scientific research programme, she demonstrated that tenofovir gel prevents both HIV and Herpes Simplex Virus (HSV) Type 2 infection. This finding has been heralded as one of the most significant scientific breakthroughs in the fight against AIDS by WHO, UNAIDS and several leading organisations.

Professor Abdool Karim is a reviewer for several public health and AIDS journals, serves on the board of the AIDS Law Project and is a consultant to WHO, UNAIDS and the UNDP on several AIDS-related expert committees on gender, ethics, treatment, and re-

search capacity building. She is currently a co-chair of the HIV Prevention Trials Network, a large National Institutes of Health-funded network that sets and undertakes key HIV prevention research globally. Professor Abdool Karim is the recipient of numerous awards. In 2011, she was awarded the Drug Information Association's President's Award for Outstanding Achievement in World Health for research on the tenofovir gel microbicide; the Allan Rosenfield Alumni Award for Excellence; and the NSTF-BHP Billiton Award for Research Leading to Innovation. She has published over 94 scientific articles in peer-reviewed journals and 22 book chapters.

She is currently an Associate Professor in Epidemiology, Mailman School of Public Health, Columbia University; Adjunct Professor in Public Health and Family Medicine, Nelson R Mandela School of Medicine, UKZN; and an Associate Scientific Director of the Centre for the AIDS Programme of Research in South Africa (CAPRISA).

Associate Professor Deevia Bhana

Professor Deevia Bhana completed her PhD at the former University of Natal in 2002. Her research interests comprise gender, childhood sexualities, AIDS and schooling. She is a co-author of a book entitled *Towards Equality? Gender in South African schools during the HIV/AIDS pandemic* (UKZN Press, 2009) and a co-editor of the book *Babies and/or Books: Pregnancy and young parents at school* (HSRC, in press). Professor Bhana has made a committed and active contribution to highlighting the importance of childhood sexualities, gender and HIV/AIDS education in South Africa in relation to diverse global cultures. She has published 40 research articles in peer-reviewed journals, two books and 17 book chapters. She has an excellent record of research grants and involvement nationally and internationally in the field of children, gender and sexualities. She is regarded as a pioneer in the field of South African schooling and childhood sexualities and is an NRF C1-rated researcher.

She is currently an Associate Professor and Deputy Dean in the College of Humanities at UKZN.





Associate Professor Pearl Mpilenhle Sithole

Professor Pearl Sithole obtained her PhD in Social Anthropology at the University of Cambridge in 2001. Before returning to teaching at UKZN recently, she had been a Senior Research Specialist with the Human Sciences Research Council. Professor Sithole's areas of intellectual passion are knowledge production, governance and development (with a specific focus on local government and traditional leadership), and gender analysis. She has published over 20 research papers in peer-reviewed journals, authored and co-authored three books and contributed eight book chapters. Her intellectual advocacy project is captured well in her book *Unequal Peers: The Politics of Discourse Management in the Social Sciences* (2009). Professor Sithole's innovative writings on African scholarship not only confront the politics of knowledge production, but also advance innovative mechanisms for the integration of advocacy and policy strands with theoretical relevance. Professor Sithole is also a political analyst, a contributor to writings advancing community work, and a board member/panellist for many heritage institutions and academic panels.

She is an Associate Professor and Anthropologist based at the Community Development Programme at UKZN.

Ms Tricia Naicker

Ms Tricia Naicker completed her Masters degree in Chemistry *cum laude* in 2008 at UKZN.

Ms Naicker is currently finalising her PhD studies within the GGKM research group at UKZN. Her research focuses on the synthesis of novel chiral catalysts, which play a vital role in the synthesis of all new and existing drugs. She already has a remarkable list of publications, including 20 manuscripts published in international peer-reviewed journals, and has written a book chapter with one of her co-supervisors from AstraZeneca in Sweden. Ms Naicker plans to pursue a research-based academic career.





Ms Karen Pillay

Ms Karen Pillay is a PhD student at the Department of Biochemistry, UKZN. She has an impeccable academic record, having obtaining six distinctions in grade 12 (including Mathematics, Biology and Physical Science) and went on to complete her BSc degree in Biomedical Science *cum laude* and her BSc Honours degree *summa cum laude* at UKZN. Her decision to pursue an MSc and PhD study in the fields of Chemistry and Biochemistry highlights her versatility in scientific research. Ms Pillay's research interest lies in amyloid diseases, in particular type II diabetes. Her doctoral study entails the synthesis and evaluation of peptide-based inhibitors to type II diabetes and developing assay systems to assess the inhibitory potential of newly designed anti-diabetic drugs.

Ms Anna Zawilska

Ms Anna Zawilska completed her BSc in Electronic Engineering *summa cum laude* at UKZN in 2010, receiving the Engineering Council of South Africa Merit Award for being the final year student with the most outstanding results at UKZN in 2010, and second prize in the South African Institute of Electrical Engineers National Student Final Year Design Project Competition for her design project. She has an outstanding academic record, having obtained eight distinctions in matric – coming first among learners at private schools in KwaZulu-Natal and second overall in the district of Umlazi.

She is currently working towards her MSc at UKZN in the field of digital image steganography that combines the topic of data security with image processing, which has become especially pertinent given the boom in media sharing over the Internet. Since beginning work in February 2011, Ms Zawilska has already been accepted to make presentations at two conferences. **N**





“We have to think out of the box”

As Women’s Month drew to a close, Liz Clarke spoke to Professor Cheryl Potgieter, University Dean of Research and Professor of Psychology at UKZN about the role of women academics in today’s society.

It’s more than a mission. It is a passion.

That’s what you soon learn when you engage with Professor Cheryl Potgieter about the role of women academics in contemporary society.

‘We have to be honest, outspoken and support each other. We also have to be proactive and realise that women have many challenges. But we are not victims and we also have agency to “make things happen”.’

It seems that this strategy of empowerment is reaping results. Six women scientists from UKZN have been placed among the top achievers in the country.

Among the six who won awards at the Department of Science and Technology’s annual Women in Sci-

ence Awards were Professor Quarraisha Abdool Karim, who won the Distinguished Women in Science category for her work with an anti-HIV microbicide gel and Professor Pearl Mpilenhle Sithole, who won the Distinguished Young Women in Science category in the area of social sciences and humanities.

Other winners were Professor Deevia Bhana, the second runner-up in the Social Sciences and Humanities category, Anna Zawilska who won a Master’s fellowship and Karen Pillay and Trisha Naicker who won doctoral fellowships.

Potgieter said that UKZN had cause to celebrate, not only the achievements of these women, but also the achievements of UKZN as a whole.

She said that on the night of the awards colleagues from other universities asked her what UKZN’s secret recipe was for having so many winners.

‘I told them there was no secret and that it was about a supportive infrastructure and policy environment. It was also about providing funding, women believing in themselves, visionary leadership and tackling sexism and other challenges that could be obstacles to success.’

However like other institutions, she says UKZN does not have a perfect environment.

‘But we know that a “chilly institutional climate” is an obstacle to women’s success and we are trying to “warm it up”.’

She says that large numbers of women graduate with undergraduate degrees from all South African universities.

‘But the challenge is at the Masters and doctoral levels. It’s what we call the leaky pipeline,’ explains Potgieter.

‘Of course it has a lot to do with what is expected of women during their late 20s and early 30s. Many are raising children and quietly supporting male partners to study further and climb the career ladder.’

In this vein, she feels strongly that women’s personal home lives influence their professional life and it is an issue that is not sufficiently addressed.

‘Often the same men who in public support women having access to opportunities in the work place are the ones who are not supportive on the home front.’

She says that UKZN recognises that many women complete PhDs in their late 30s and 40s and then start publishing and for these reasons funding and other opportunities no longer carry a strict age limit.

Needing a number of women to succeed is not only because they are women, she emphasises.

‘It is important too, that while we need to increase the number of women in science, we must also bear in mind that we are not playing a numbers game. Increasing the number of women is about equity, economics and essentially development.’

And it is also not only about women’s access to Higher Education and institutions, she says, it’s also about participation in these institutions. Potgieter believes in ring-fencing budgets to support women academics but she is also a strong believer in monitoring and evaluating all the initiatives. She is adamant that policy and funding are the minimum requirements and that visionary

and gender sensitive leadership was equally crucial.

She points out that while we need to celebrate the fact ‘that it is not all doom and gloom’ for women academics, national statistics indicate that in 2007 the majority of scholars that graduated with doctoral degrees were white men in their 30s.

‘I and others have pointed out the issue is both about race and gender.’

But there is also another side.

There are factors, she says, which are not often spoken about, like women academics being fearful of becoming targets for violence. ‘I often listen to male colleagues talking about how late they work at the office or how they arrive at the crack of dawn. I personally know how women are petrified being alone in the office at those times. I therefore support interventions, which make campuses safe spaces for work.’

One can have all the policies and funding which support research, she says. ‘But if women are scared of being raped or attacked in their office – surely that impacts on whether you publish or not?’

The Women and Research Academy, which she publicly launched last year focuses on interventions, which includes what she labels psychological redress. ‘Simple: women believing that they have a right to be in key positions and that they are not impostors’.

‘Often success is a combination of hard work, harnessing opportunities, challenging obstacles and liberating one’s mind or psyche from oppressive, limiting assumptions.’

She says that about a decade ago she did a paper on the history of Women’s Studies Departments in the country and that what many do not know is that UKZN was the first university in the country to have a Women’s Studies Department.

The University is building on that history and currently one of the strategic focus areas is race, gender and identity research.

Potgieter says that UKZN does not only provide a supportive research environment but also showcases women’s work and work that focuses on gender issues.

She points to a new publication of the Research Office, called *UKZN Voices*, which publishes academic articles in an accessible form and which is distributed to schools, hospitals and communities. They are currently working on an edition, which has articles focusing on research into women and gender-related challenges.

Potgieter is comfortable to say that as a Black woman academic she holds strong feminist views. ‘We have to think out of the box, be fearless, strategic, and engage with bold and imaginative strategies. That’s the only way we can get closer to our overall goals.’

However, humility, she believes, is an important characteristic of any leader and successful person. **N**

Professor Cheryl Potgieter is UKZN’s Dean of Research and Professor of Psychology. She has published both locally and internationally and her recent publications (2010) with a post-doctoral scholar include groundbreaking work on serial rapists in South Africa. Her monographs on *South African Black Academics* (2002) and *Gender, Development and Transport in rural Eastern Cape* (2006) are widely quoted.

Her previous positions include Founding Director and Head of Gender and Development at the Human Sciences Research Council, Head of the Women and Gender Studies Department at the University of the Western Cape and Professor in Psychology at the University of Pretoria.



Qhelile Nyathi

UKZN-SIFE President

Interviewing 23-year-old University of KwaZulu-Natal (UKZN) honours student Qhelile Nyathi does wonders to restore faith in the quality of our youth and the future of our country.

GREG DARDAGAN

And when I hear she grew up in the same town I did – Bulawayo in Zimbabwe – and went to the same junior school – Hillside Primary – we are immediately on the same wavelength!

Nyathi is an achiever of note and, as far as her potential is concerned, let's confidently say: 'You ain't seen nothing yet.'

She is studying for her honours degree in financial mathematics on a Mandela Rhodes Scholarship she won and has her eyes firmly set on going to Oxford University in England next year to read for her Masters Degree in Financial Economics.

Quite a bright spark but perhaps what really identifies her as someone extra special is the role she is playing as president of the UKZN branch of Students in Free Enterprise (SIFE), an organisation which reaches out to less privileged communities implementing projects which improve the lives and living standards of the people.

The projects are structured to ensure they are sustainable and are transferring skills, knowledge or resources to communities in a way that the people are empowered and take ownership of the ventures.

SIFE-UKZN – ranked in the Top 15 out of more than 1 500 SIFE teams worldwide – won the organisation's national championships in

Johannesburg earlier this year and will now represent South Africa at the World Cup competition in Malaysia. They will compete against 38 other international teams at the contest where they have done well previously but have not yet managed a win.

SIFE-UKZN is represented by 63 students from UKZN campuses in Durban, Westville, Pinetown and Pietermaritzburg. At competitions SIFE teams give presentations on projects they have undertaken during the year.

Nyathi will lead her eight-strong World Cup team in Malaysia where they will highlight several of the ventures successfully launched over the past 12 months.

One of the most successful is the Faranani Project at a centre for the elderly at Hammarsdale which provides refuge and support for 130 people.

'The centre was running short of funds so we went there and identified two businesses they had established but were in urgent need of assistance,' said Nyathi.

'They were manufacturing crafts but didn't have a market so we negotiated with UKZN's Teaching and Learning Office managing to secure a contract for them to produce 1 400 items for an upcoming conference the office is holding. The deal is worth R42 000.

'They were also making soup but raising less than R1 000 a month.

So we helped them design a brand for the soup as well as sourcing packaging and business has improved substantially.'

Nyathi's team also discovered the centre had land available but was not using it productively. 'We managed to raise about R23 000 thanks to Tongaat Hulett and bought them greenhouses so they now have an agriculture business on the side. We also negotiated with Boxer Stores in Hammarsdale who have agreed to buy produce from the old folk on a regular basis.'

Other projects Nyathi and her team will present at the World Cup involve food security and environmental sustainability programmes and a financial literacy project. On the environment front SIFE-UKZN is driving a community project to plant 700 trees in the Durban south region... 390 are already in the ground.

'SIFE activities teach students practical skills such as how to implement projects, form networks and pitch ideas to big corporates and academics. You also learn about time management, problem solving, and team work.

'Involvement can also indirectly earn students scholarships and bursaries as well as employment opportunities,' said Nyathi. **N**



Grant Boosts Health Project

A recent Medical Research Council (MRC) impact assessment presented at the South African AIDS Conference in June 2011 revealed that more than 20 000 new perinatal HIV infections are being averted annually in KwaZulu-Natal (KZN).

This success can be attributed to a host of factors, many of which fall within the broad remit of the 20 000+ Partnership Project. The project, which has recently received a major boost in the form of a R9 million grant from The Atlantic Philanthropies, commenced in 2007 at the request of Dr Sibongile Zungu from the KZN Department of Health when presented with the findings from a research study conducted by Professor Nigel Rollins, then Head of Maternal and Child Health in the Department of Paediatrics at the Nelson R Mandela School of Medicine at the University of KwaZulu-Natal (UKZN). Rollins, who headed the project, is now based at the World Health Organization (WHO) offices in Geneva.

The partnership also includes Professor Pierre Barker from the Institute for Health Care Improvement (IHI), an organisation based in the United States, which works in more than 50 countries internationally.

The 20 000+ Partnership Project covers three health districts in KwaZulu-Natal – Ugu, eThekweni and uMgungundlovu – 15 hospitals, and more than 200 primary health care facilities which serve a population of more than 5.5 million people.

For further information about the 20 000+ Partnership Project, contact Jennifer Reddy by email at reddyj@ukzn.ac.za or telephone on +27 (0)31 260 3264.

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Securing Africa's future

In 2010, with just five years to meet the Millennium Development Goal of halving hunger and poverty in Africa, many millions of people on this continent will die slow and painful deaths in a world of considerable abundance.

Against this background, the University of KwaZulu-Natal (UKZN) proposes to consolidate its considerable strengths in agricultural and related training and research by establishing the African Institute for Sustainable Rural Livelihoods (AISRL) on its Pietermaritzburg campus. This continental resource will put food insecurity onto the international stage and enable a concerted multi-disciplinary African response to the need for sustainable agricultural solutions.

A budget of circa R100m is required for the Institute, approximately R50m of which has already been secured from the South African Department of Education, the University itself, individual members of the University's Council and Executive, the Convocation Executive, the UKZN Foundation Boards, and staff and students of the University.

Key actors in the local, national and international grant-making world are invited to contribute towards this initiative. Naming rights and other forms of recognition are available and donors will receive substantial tax benefits.

Further information about the campaign for AISRL can be obtained from Nadia Paul at the UKZN Foundation at pauln@ukzn.ac.za or by telephone on +27 (0)31 260 2018.



Architects' sketch of the proposed new African Institute for Sustainable Rural Livelihoods.

UNITE shows the way

Green thinking – Liz Clarke
found it alive and well down a winding road where the trees have rights and students are inspired.

The corridors are crooked, the windows at a jaunty slant and one ceiling is sprouting with a nest of pipes and steel tubes.

But that's not the end of the story. It's a building where the trees have their say and if an old indigenous tree is in the way, then sorry, make a plan to go round it.

Durban Architect, Paul Phillips loved the brief.

Having spent his student years in a building 'with as much aesthetic ambience as a warehouse, high windows, bad light and dreary interiors,' he says it was a chance to turn that old-fashioned campus legacy on its head and do something completely different, all of it green.

The building, known as the UNITE complex, is at the end of a windy road at the back of the UKZN campus, next to the Engineering complex.

It's the overgrown Cinderella side overlooking a nature reserve, the haphazard rooftops of Cato Manor where the afternoon sun has its say.

It has a history. Anglo American were the originators of the UNITE concept, which was about offering disadvantaged students study opportunities through a bridging course to assist them in following a career in engineering science.

This concept is still alive and well.

'It's about investing in human capital,' says the Head of the UNITE Programme, former school teacher, Noel Powell. 'It's about developing

the skills of Black learners, who under normal circumstance would not have the opportunity or the money to access higher learning.'

The new building, due for completion in November, is designed not only to show how nature and engineering can interact with each other, but to open the minds of students to ideas that go beyond conservative thinking and add value to the total teaching and learning enterprise at UKZN.

Phillips will tell you that all of that "quirkiness" and more has been incorporated into the building. 'We want students to feel energised and inspired. That is why space and light and views are so important. So too is the feeling that the trees and nature are a part of that inspiration.'

The unusual features are also part of that holistic thinking.

Explains Phillips: 'What we are saying to students is that windows don't necessarily have to be straight, corridors can have interesting bends and twists, ceilings don't have to be covered with board, if the functioning parts, say in a computer facility, are focally intriguing.' The green energy is critical he says, whether it's using the heat of the sun or the coolness of high ceilings, it is all about thinking differently, looking at ways of developing ideas out of the box and reducing the carbon footprint.

Rudi Kimmie, Deputy Head of the funded UNITE Programme, said that about 50 students a year are accepted for the Programme with their fees and accommodation funded



(From left) Rudi Kimmie, Paul Phillips and Noel Powell at the new UNITE complex.

by a number of corporate entities and supported by the Department of Education.

'The idea is to run the Unite Programme in conjunction with the engineering degree course, so that after two years of added tuition and life skills disadvantaged students can then enter the mainstream degree programme.'

The UNITE team are hoping that their new thoroughly green building will be completed by the time the Cop 17 delegates arrive in November.

'We would like them to see that Durban is making a contribution to green and environmentally acceptable design,' says Powell, 'where Natal Mahoganies and giant figs also have their rights protected and young people are being taught to embrace the idea of a cleaner future.'

UKZN community scoops Living Legend Awards

At the eThekweni Municipality's fourth annual Living Legend Awards Ceremony on September 7, six of the 21 awardees were UKZN staff members and alumni. The Awards celebrate and acknowledge individuals who have demonstrated positive and outstanding contributions to the City's legacy in different sectors of society.

Specialist Surgeon and Head of the Department of Surgery at

UKZN's Nelson R Mandela School of Medicine, Professor Thandinkosi Madiba was one of the awardees. Madiba has received national and international recognition for his research on diseases and cancer of the colon and rectum.

Professor Paulus Zulu, Director of the Maurice Webb Race Relations Unit, which is based at UKZN, received his Living Legend Award in recognition of his life-long contribution to educating

African students and scholars.

School of Music Lecturer Ms Susan Barry, received a Living Legend Award for her musical contributions and community engagement with the City, along with alumni: respected herpetologist (the study of amphibians), Dr Angelo Lambiris; former South African cricketer, Mr Jonty Rhodes; and the former Chief Justice of the Constitutional Court of South Africa, Sandile Ngcobo.

UKZN hosts launch of National Science Week



Minister of Science and Technology, Mrs Naledi Pandor addressed primary and high school learners at the launch of National Science Week on the Westville campus. National Science Week ran from August 1-6.

The aim of National Science Week is to inspire learners to study mathematics and science at school. The theme this year was "science for economic development".

More than 70 schools around KwaZulu-Natal attended the launch and more learners visited different departments throughout the week. A series of public lectures by leading UKZN lecturers was held.

Education Officer for the National Zoological Gardens, Mr Justice Bilankulu, shows the Minister of Science and Technology, Mrs Naledi Pandor, a rhino horn which formed part of his organisation's exhibit. Accompanying Mrs Pandor are UKZN Vice-Chancellor, Professor Malegapuru Makgoba, and UKZN Chancellor and KwaZulu-Natal Premier, Dr Zweli Mkhize.

Alumnus and Greenpeace Director visits UKZN

All eyes have been on the City of Durban since it was announced that it will host the Seventeenth Conference of the Parties (COP 17) of the United Nations Framework Convention on Climate Change (UNFCCC) and CMP 7 from November 28 to December 9. Twenty thousand delegates, including heads of states and governments from more than 100 countries will converge on the Inkosi Albert Luthuli International Conventional Centre (ICC) for the Conference.

UKZN alumnus and Executive Director of Greenpeace International, Dr Kumi Naidoo and Fundraising Director of Greenpeace Africa, Mr Melvyn Gattinoni paid an all-day visit

to the Westville campus on August 24 to discuss potential collaboration between Greenpeace and the University.

Naidoo and Gattinoni met with International Relations staff and the University Dean of Research, Professor Cheryl Potgieter. Naidoo also gave a lecture to postgraduate students enrolled in Environmental Science programmes, and presented a public lecture on "The Role of South African Higher Education in Greening the Revolution". He called for the training of graduates who will be pioneers of the climate struggle, introduce and implement good policy, and have the necessary skills to drive the right initiatives.

UKZN in World's Top 500

The 2011 Academic Ranking of World Universities (ARWU) results were released in August. UKZN has maintained its ranking within the "best 500" universities of the World. This is the 8th consecutive year that UKZN has been so ranked. UKZN is also ranked third nationally behind UCT and Wits. There are no other South African universities ranked within the Top 500. In 2003 when this ranking was initiated, neither the former University of Durban-Westville nor the former University of Natal was ranked.

In the African continent, only four universities out of a total of 485 are ranked (UCT, Wits and Cairo/UKZN) in 2011. UKZN and Cairo are ranked within the same band.

Vice-Chancellor, Professor Malegapuru Makgoba congratulated academic staff for this honour. 'It is through their hard work, commitment, innovative research, their quality of teaching and through meaningful community engagement that UKZN earns such accolades and recognition,' he said.

K-RITH Groundbreaking Ceremony



From left: Professor Malegapuru Makgoba; Dr Sibongile Zungu, HOD KwaZulu-Natal Health; Dean Kurt L Schmoke Esq; Dr Ben Ngubane; and Professor William Bishai at the groundbreaking ceremony.

The KwaZulu-Natal Research Institute for Tuberculosis and HIV (K-RITH) marked a significant milestone on July 12 with a festive groundbreaking at the site of its new laboratory building at UKZN's Nelson R Mandela School of Medicine. A three-day scientific symposium focused on the scientific challenges posed by Tuberculosis (TB) and HIV drew distinguished researchers and leaders from South Africa and around the world.

K-RITH aims to use basic science research to help those afflicted by the epidemic of TB and HIV in South

Africa and around the world. K-RITH was founded in 2009 as a partnership between UKZN and the US-based Howard Hughes Medical Institute (HHMI) to conduct outstanding basic science research on TB and HIV, translate the scientific findings into new tools to control TB and HIV, and expand the educational opportunities for future scientists in the region.

Research by K-RITH scientists is already underway in laboratories at the Medical School and the K-RITH building itself is expected to open in the latter half of 2012.

QS World Rankings Seminar

Following the successful launch of the QS-MAPLE (Quacquarelli Symonds – Middle East and Africa Professional Leaders in Education) Conference and Exhibition in Dubai, in May, the 2nd QS-MAPLE will take place in May 2012 at UKZN. The University is co-host and organising partner to QS Asia.

This was announced at a QS World University Rankings Training Seminar focusing on "Globalisation of Universities" which was held at the Westville campus on July 21 and 22.

Attended by delegates from African universities and international partners, the workshop was conceived by QS Asia to help African universities rise in global recognition and world rankings. This initiative is in line with QS Asia's mission to promote the development of Higher Education in Africa in the global context.

History Conference The largest ever

The Historical Studies Programme on the Howard College campus hosted the Southern African Historical Society (SAHS)'s 23rd Biennial Conference from June 27-29. 'With more than 230 delegates from across the world and 180 papers presented this was the largest SAHS conference ever,' said SAHS President, and UKZN History Professor, Julie Parle.

The conference theme "The Past and its Possibilities: Perspectives of Southern Africa" attracted papers and panels on a wide variety of themes - including histories of health and the environment, biography, the military, and economic history. The papers drew on studies conducted in Botswana, Zimbabwe, Angola, Mozambique, and South Africa.

GSB is the best business brand in KZN

UKZN's Graduate School of Business (GSB) is the best business brand in KwaZulu-Natal.

This is according to the KwaZulu-Natal Top Business Top Ten Brands, a competition which is opened to all businesses with headquarters

in KwaZulu-Natal. The GSB, which obtained first place out of over 360 KwaZulu-Natal-born brands, was up against business giants like Spar, KZN Mr Price, The Shark, Co-operative, and Edison Power Group.



Head of the GSB, Professor Anesh Singh (second from left) collects the KZN TOP BRAND Award at the FNB Top Business Award Ceremony from Carol Coetzee, HOD in the Economic Development and Tourism Department, and Grant Adler and Lalita Ventura from Top Business Publishers.

JL Dube Memorial Lecture

The College of Humanities hosted the 8th Annual Memorial John Langalibalele [Mafukuzela] Dube lecture which included a presentation of a film about the Wilcox family.

Dube was the founding president of the South African Native National Congress, the forerunner of today's African National Congress.

The Wilcox family were missionaries who shepherded and nurtured a young talented and promising 16-year old Zulu boy, John Dube, sending him in 1887 to America where he was educated. Keita told the audience about his eight-year journey tracing the footsteps of the Wilcox and Dube families, whose friendship in the late 19th century, stands as a major landmark in the struggle for black liberation and democracy in South Africa. Along the way, he had given both families some lost pieces of their history, reconnecting them after they had lost contact with each other for 90 years.

Unique partnership to boost food security

KwaZulu-Natal MEC for Finance, Ms Ina Cronje, was the main speaker at the launch of a unique, mutually-beneficial partnership between UKZN's African Centre for Food Security (ACFS) and the KwaZulu-Natal (KZN) Provincial Treasury. She highlighted the importance for government to base their decisions on sound scientific research and knowledge and said, 'Government and universities should be natural partners'.

The project will see six ACFS students, currently studying towards a Postgraduate Diploma in Food Security, being supported by and working with the Treasury to conduct extensive research in KZN. Their research will focus on various topics relating to poultry production and will address real-life problems for which the province is seeking answers. In turn, the support from Treasury will enable the students to implement their knowledge and skills in the communities, obtaining valuable practice for their future careers.

Academic appointed to Employment Conditions Commission

Professor and Acting Head of the School of Development Studies at UKZN, Professor Imraan Valodia has been appointed to the Employment Conditions Commission (ECC) by the National Minister of Labour, Ms Mildred Oliphant for a three-year term starting, starting on July 1, 2011.

The ECC is set up in terms of the Basic Conditions of Employment Act (BCEA), which sets minimum employment standards for South Africa. 'The BCEA sets the legal framework for matters such as leave, sick leave, minimum wages, etc,' explained Valodia, whose research interests include employment, the informal economy, gender and economic policy, and industrial development. The ECC will be advising the Minister on all issues related to employment in South Africa.

Student scores high in Accounting Exams



Ms Heather Snyman did the University proud when she earned herself a spot in the Top 10 of the South African Institute of Chartered Accountants (SAICA) Board Exam Part I. She graduated in April with a BCom Honours *cum laude* from UKZN.

Students from UKZN's School of Accounting regularly secure positions in the Top 10 of Part I and Part II of the exam.

EMS has much to celebrate

Enriched Management Studies (EMS) Programme Alumnus and Director of Low Income and Unsecured Lending Credit at Standard Bank of South Africa, Mr Thabani Ndwandwe, delivered a motivational talk at the 22nd EMS Awards Ceremony hosted by the EMS Programme of the Faculty of Management Studies at Howard College on August 12. The event was also to celebrate the academic excellence of EMS Students.

Ndwandwe is a product of the unique sponsor-driven programme established 22 years ago as the Faculty's community outreach initiative.

UKZN proud of Brightest Young Minds

Eight UKZN students are among South Africa's 100 Brightest Young Minds selected by the Brightest Young Minds Organisation. The students attended the Brightest Young Minds Summit in Johannesburg from July 4-9. UKZN, the University of Cape Town and Stellenbosch University had the highest number of representatives.

Six of the students are based on the Howard College campus, while one is from Pietermaritzburg and one from the Westville campuses.

The Brightest Young Minds Summit is South Africa's premier youth summit that brings together 100 of the brightest and most passionate young minds with the view to connecting them and channelling their hearts and minds into initiatives that have a positive societal impact. They are chosen from thousands of entries from university students and young people between the ages of 20-30 from all over the country. They are selected using the criteria of innovation, leadership, and academic accomplishments.

Geology graduate receives two accolades

The quality of the Honours thesis produced by School of Geological Sciences student, Mr Brendon Jones, was of such high merit that he was commended by two separate organisations. Jones was recently the recipient of the South African Institute of Engineering and Environmental Geologists (SAIEG) Student Award for 2010 and the Geological Society of South Africa (GSSA) Houghton Award for 2010.

Jones' project was titled: "Evaluation

into the stability of a rehabilitated pit wall slope at Coedmore Quarry". Located in Durban, Coedmore Quarry's rehabilitation programme involves the tipping of waste rock over the final highwall. However, this was stopped because of concerns that it may prove to be a geotechnical hazard. Jones concluded that the presence of a groundwater table, and occasional peak accelerations reached during blasting could have an adverse impact on its stability.

Research ethics under the spotlight

Director of the South African Research Ethics Training Initiative (SARETI), Professor Douglas Wassenaar's Inaugural Lecture on the Pietermaritzburg campus on June 22 raised interesting questions about research ethics.

Wassenaar, who serves on the World Health Organization's Vaccines Advisory Committee said that although the aim of research is to develop

generalisable or in-depth knowledge, it also has the potential to inflict physical or psychosocial damage and harm the dignity of participants. Research ethics attempt to ensure that participants are treated with dignity and respect while they contribute to the social good and may help us find the "least harmful" route to knowledge and research capacity development.

Victoria and Griffiths Mxenge Memorial Lecture

To commemorate the important role its alumnus, Griffiths Mxenge, and his wife Victoria, played in the struggle to liberate South Africa from the shackles of apartheid, the Faculty of Law held its 9th Victoria and Griffiths Mxenge Memorial Lecture and a Student Awards Ceremony.

Alumnus and guest speaker Honourable

Mr Justice Zakeria Yacoob acknowledged the contributions that the couple made to the achievement of the constitutional project even before the Constitution came into existence.

Justice Yacoob said that the Mxenges left no stone unturned in ensuring that every effort to hijack the legal system was thwarted with every fibre in their being. 'We must today not allow the law to be used as an oppressive tool by anyone. We must fight every move to do so,' he added.



Justice Yacoob sharing a joke with the Mxenge's son Mr Mbasa Mxenge.

Project tackles air pollution

In a unique interdisciplinary collaborative project, a group of UKZN scientists are tackling the environmental and health issues and risks in the south Durban basin as part of an international project known as EO2Heaven (Earth Observation and Environmental Modeling for the Mitigation of Health Risks). Co-funded by the European Commission as part of the Seventh Framework Programme (FP7) Environmental theme, the three principal UKZN partners are the School of Environmental Sciences, the Department of Occupational and Environmental Health and the School of Computer Science.

Internationally renowned as a hotspot for air pollution, the south

Durban region is home to over 120 industries, including two of the biggest oil refineries in the country. Residents within this area suffer from serious health problems, especially respiratory tract infections.

The main focus of the project is on air pollution and its effects on respiratory outcomes amongst children. The aim is to create a web-based risk map for the Durban area which will allow people to go online and select where they live or work and receive information about their risk to exposure from elevated pollution levels on a particular day or three or four days in advance.

UKZN hosts Michigan students

During the past decade 20-30 staff and students from various disciplines at the Michigan State University, USA, have visited UKZN as part of the Multi-Racial Unity Living Experience (MRULE) Program.

This year 15 students led by Dr Jeanne Gazel, the Director of the MRULE program, visited UKZN to attend classes with Professor Priya Narismulu, Acting Head of the School of Literary Studies, Media and Creative Arts. The classes focused on issues of South African culture and literature, such as deconstructing discourses of race, gender, class and HIV and AIDS. MRULE will return to South Africa and UKZN in 2013 with another group of students.

Lessons from Edinburgh

As part of the College Reorganisation initiative, Dr Bruce Nelson, College Registrar at the University of Edinburgh addressed an Open Forum for UKZN support staff on May 24. His talk focused on the professional support services needed in a College Model.

UKZN's College Model was reviewed by a panel of international experts during 2010. The panel recommended the consolidation of Schools, a two-tier College management structure and the devolution of the critical support sector areas. A period of consultation with staff commenced early this year and implementation will take effect in January 2012.

The University of Edinburgh undertook a restructuring exercise ten years ago. Nelson said that the devolution of decision-making and financial resources to Schools resulted in increased flexibility and responsiveness; improved administrative processes; a higher level of support for academics in the Schools; more responsible and professional financial management; and a better understanding of the strategic goal of the university.

Sibongiseni Dhlomo

KZN Health MEC

Liz Clarke



From the start of his tenure KwaZulu-Natal Health MEC Sibongiseni Dhlomo has reiterated that “words and more words” are just not enough when it comes to addressing the health needs of communities at large. It’s the action that follows that count.

It is this homogeneous commitment that has underscored his medical career from the time he became a student at UKZN’s Medical School in 1980, a commitment that spurred him on to gain further knowledge.

After graduating in 1985, he continued his studies in psychology and sociology, later obtaining a post-graduate diploma in public health and strategic project management.

This was followed by a post-graduate diploma in HIV and Aids management and a post-graduate diploma in Palliative Care.

Dhlomo worked as a doctor at King Edward Hospital, and later opened his own practice at Madadeni Medical Centre in Newcastle. He then went on to lecture in public Health at the University of KwaZulu-Natal, advising the Vice-Chancellor.

In the past two years this gently spoken and for the most part under-

stated guardian of the province’s health requirements, has given wings to a number of action-based programmes that promise to raise the quality of health-care in KZN.

‘The Department of Health in KZN is acutely aware of the health challenges facing the province,’ he says. ‘Health is always an emotionally charged portfolio and the salvos aimed at it are fast and furious.’

But the news is encouraging that there have been positive changes.

‘It is still very much work in progress,’ he says ‘But we can finally see the light at the end of the tunnel – and with that, hope for better health care for all.’

Dhlomo wasn’t long in his new position as MEC for Health when he introduced an intriguing project called, “Make Me Look Like a Hospital.”

It was a personalised approach that asked the simple question. ‘What is preventing a hospital from showcasing itself as a presentable facility?’

The campaign got down to the basics of documenting the challenges and problems facing hospitals in KZN.

Already, says Dhlomo, 22 out of the province’s 63 hospitals have undertaken a revamp. It has meant extensive travelling for the MEC and his team across the province’s hospitals and clinics, talking to patients, staff, and health personnel – often arriving unannounced.

The fight against HIV remains a heartfelt challenge for Dhlomo and his team particularly when it comes to maternal health.

‘We were faced with some devastating numbers, so many mothers and babies dying, but I’m pleased that we have made some major inroads providing treatment to all pregnant mothers who attend provincial antenatal clinics, reducing the transmission rate of HIV from mother-to-child from 21 percent in 2008 to below three percent.’

He firmly believes that within a few years, it will be possible to almost eradicate all mother-

to-child transmission of HIV.

He says that more people in the province checked their status, with 2.3 million having tested for HIV since the launch of the HIV, Counselling and Testing campaign in April 2010.

But he also realises that the guard cannot be dropped.

Circumcision programmes are also a top priority to reduce the risk of HIV infection.

More than 140 120 men and boys have so far been circumcised throughout South Africa, and 35 688 of them are from KZN.

And if actions speak louder than words then Dr Dhlomo sets a definitive example.

This year he competed in the grueling Comrade’s ultra Marathon in an effort to encourage people to ‘ditch unhealthy lifestyles’.

In so doing he became the first sitting member of the KwaZulu-Natal legislature to enter the marathon.

In line with his mission to improve the health of all South Africans, the KZN Department of Health recently launched the Healthy Lifestyle Initiative with the intention of fighting ill health by eating nutritious food and increasing physical activity.

He believes that creating an awareness of the dangers of non-communicable diseases and ways of reducing deaths and diseases is a critical part of any health strategy.

Evidence, he says, has shown that children who have been active in a sporting code will spend less time doing “unsavoury things” such as using drugs or drinking alcohol.

Dhlomo was previously eThekweni’s Deputy Municipal Manager in Health. For four years before that he worked as a director of project known as Phithidisa in the South African Military Health Service (SAMHS), which looked into HIV research in the SANDF.

Sources include: The Government Communication and Information System; The National and Provincial Department of Health

Lara Logan

CBS Chief Foreign Affairs Correspondent

Liz Clarke



The journey has been challenging, even hugely difficult and life threatening at times but UKZN BCom graduate and international media luminary, Lara Logan, would not change her chosen profession for anything.

It is exploration, discovery and new and often dangerous horizons that have dominated Logan's career as a world-class journalist.

Today her face can be seen on billboards in New York's Times Square as part of the CBS broadcast team. She is the channel's chief foreign affairs correspondent and a regular contributor to their *60 Minutes* programme.

Turning back the pages, her passion for writing goes back to the time, when as a young student, she joined the *Sunday Tribune*.

'From the moment I spent my

first five minutes "on the job" at the *Sunday Tribune*, I knew I had found my home. There was never any question about it. This was something I was meant to do.'

While her high profile career has taken her to many dangerous and contested terrains, including Egypt, Afghanistan and Iraq, the thrill, excitement or adrenalin of combat, sometimes coming under fire, has, she says, never been the motivation.

'I have rather been drawn to seeing and understanding life at its extreme, driven by a very idealistic desire to right the wrongs of the world and bear witness – to give a voice to the voiceless.'

For her, the memorable stories are the ones that are real and reach into people's consciousness and touch them in a way they believe

and do not forget.

'I love to tell those stories. I always aspired to doing great work. That was my only ambition.'

'It is in the roughest, most brutal situations,' she says you find what you are made of and you are reminded what is important in life, what truly matters.

While there have been some lighter, more glamorous show biz moments in her career, Logan has never let her focus slip from the breaking stories of the time.

Not surprising then that the day after the September 11 attacks, she pressurised a clerk at the Russian Embassy in London to give her a visa to travel to Afghanistan to cover the conflict there. Later in Iraq she was the only US network reporter in Baghdad when the city was invaded, and when

Saddam's statue was toppled.

Africa, she says, still remains an integral part of her being.

'My soul was forged in the fires of Africa. What I learned there, from my colleagues and from the people, as I witnessed the struggle for freedom, prepared me for everything that was to come in other parts of the world. I learned my most important lessons from my own people who opened my eyes to the "real" South Africa. I have taken those lessons to the worst places in the world, and they have enabled me to survive and sometimes triumph.'

As a mother with two small children, she will tell you: 'you do not walk out the door to risk your life – unless you absolutely believe that the cause is worthy and you are totally committed.'

She accepts that she is single-minded. 'But so were most of the girls I went to school with. Its part of the South African DNA, I think.'

In the same way she will never accept the idea that a story or a place is impossible to get to – unless it truly is impossible.

'If you tell me it cannot be done, I am likely to run my head into a brick wall over and over until I break it down. If I had accepted "no" for an answer, I would never have gotten a job in the foreign media at all. I think that is the nature of every true journalist. It's not unique to me.'

Recalling her recent reportage of the people's uprising in Egypt's Tahrir Square, where she was physically attacked, she describes it 'as the worst moment of her life.

'But it only served to remind me how fortunate I am to have traveled this path, and how much I owe to the great journalists along the way who inspired me to be better. And I still strive to be better – with every story. I am never satisfied because my best work is truly yet to come. To my country, I owe a debt that can never be repaid. The struggle of so many made me a better person – and a better journalist.'

Convocation

Initiatives at a Glance



Above and insets – UKZN Convocation Executive Committee Members.

The past two years have seen significant milestones and programmes introduced by UKZN's outgoing Convocation Executive (CONVEX) whose term comes to an end in March 2012 under the Chair and Presidency of Mr Sandile Ngcobo.

Recognising the important role it has to play in the life of the University and the region of KwaZulu-Natal and South Africa, CONVEX commits itself to the Mission Statement of the University. It represents the interests of the University's Convocation members, nationally and internationally, and is committed to the realisation of its aims and objectives as laid down in its constitution.

The outgoing CONVEX was elected in October 2008. In this year's Convocation Annual General Meeting President's Report Ngcobo remarked that to celebrate their affiliation with their *alma mater* CONVEX has been actively involved in shaping and contributing to the development of our University. During this period CONVEX has been actively involved in a number of activities; including but not limited to acting as robing officers during graduation ceremonies where 8 111 new graduates were welcomed to Convocation this year. Graduates were congratulated by CONVEX which also lauded the University 'for its continuing endeavours in producing such quality graduates'.

CONVEX has launched its new UKZN Alumni Bursary Fund. The purpose of this Fund is to support those students and postgraduates who need financial

support. CONVEX also launched the John Adari Bursary Fund in honour of the late "Uncle John" who passed away last year. This bursary will support the cause that he was committed to. For more information on these bursary funds please contact the Alumni Relations Office or the UKZN Foundation. In addition, CONVEX has set up task teams to look at skills and funding/bursaries. These teams are hard at work and have produced reports which have been shared with the University Management.

'We have also been hard at work on issues around communication,' reported Ngcobo. A task team has been set up to look at ways to improve communication with Convocation. Some of the progressive strategies that have already been implemented include communicating via Facebook and Twitter, thus encouraging networking between former mates and friends from the University. The Convocation membership database is also being constantly updated.

Convocation is encouraged to participate in alumni related programmes that include local events; Associations' gatherings and reunions. 'We believe that these programmes add value to our comradeship and *alma mater*,' said Ngcobo.

College-based reunions and like events, which keep Convocation in touch with mates from their respective disciplines, are among the activities CONVEX has planned with UKZN's Corporate Relations Division.

Members of convocation are invited to visit the convocation website: <http://alumniaffairs.ukzn.ac.za>. CONVEX extends its gratitude to UKZN's Executive Management; the Alumni Relations Office; members of the Senate and Council; students; staff and the entire University community for the invaluable support received during this period.

SANDILE NGCOBO
PRESIDENT AND CHAIR
UNIVERSITY OF KWAZULU-NATAL CONVOCATION

Out & About



Finn Christensen: Alumni Relations Manager

Message from Alumni Relations

The Alumni Relations Team had an exciting and busy 2011 – having interacted with over 110 000 graduates at a range of lunches, dinners, film screenings, workshops and graduation ceremonies and *via* email, written and telephonic communication. Communication *via* the website, Facebook and Twitter has also increased during the year and is an effective way of informing graduates of UKZN events and issues.

The Salisbury Island Reunion, Richards Bay lunch, Leadership and Project Management Workshops (aimed at the more recent graduates), the New York and London receptions, the film screenings in various parts of KwaZulu-Natal, the Durban Alumni Association events as well as the launch of eight Student Chapters are particular highlights over the last six months and more detailed information on some of these and other events is included within the publication.

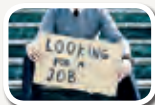
A number of interesting and important activities are planned for 2012. The Convocation Annual General Meeting and elections will take place in the first half of the year and we strongly encourage all graduates to make a concerted effort to support this event. In addition to the usual activities and areas visited a range of Reunions and visits to various other places both within South Africa (such as East London, Port Elizabeth and Kokstad) and abroad will take place. Of particular significance is a reunion for School of Music graduates and another for the MBChB graduates of 1982/83 – both of which will be held in 2012. The latter reunion will be co-ordinated by the Steering Committee of the MBChB final year (1982) classmates.

In order to invite alumni to the planned events and to keep everyone updated on University events – we are eager to secure the current contact details of alumni – especially email addresses. Also, please encourage any friends or relatives who are graduates and have not received any correspondence from the University during 2011 to provide us with their updated contact details. This can be done *via* the website.

The Alumni Relations Team looks forward to another successful year of interacting and meeting with alumni and welcomes suggestions on how we can build stronger relationships with all our fellow graduates.



*With our very best wishes,
The Alumni Relations Team*



FACEBOOK AND TWITTER

Please join us on these popular Social Networking sites. If you are not already a member, sign up now and connect with the University of KwaZulu-Natal Alumni Relations Office where you can make contact with fellow alumni and keep up to date with all the latest news, forthcoming events and information on your *alma mater*.
Facebook: <http://www.facebook.com/pages/Durban-South-Africa/>

UKZN-Alumni/100665579978579
Twitter: <http://twitter.com/UKZNAlumni>

CONTACT

Phone: +27 (0) 31 260-2958/2016/2947/2823 | Fax: +27 (0) 31 260-3265 | Email: alumni@ukzn.ac.za

OUR WEB ADDRESSES

Home: <http://alumniaffairs.ukzn.ac.za>

Find-a-Friend: <http://un.kidzafrica.co.za/FindAFriend>
Careers: <http://alumniaffairs.ukzn.ac.za/Careersandsurveys/careers.aspx>

KEEPING IN TOUCH

Provide the Alumni Relations office with 5 email addresses of UKZN alumni that are not on our database and we will send you a UKZN complimentary gift. Send to: alumni@ukzn.ac.za.

Student Chapters

for lifetime links

The College of Law and Management Studies, in partnership with the Alumni Relations Office launched four Student Chapters for third and final year Accounting and Law students on the Howard College, Westville and Pietermaritzburg campuses in August.

The rationale behind the establishment of Student Chapters is to assist students with networking opportunities; skills development; career prospects; provide a forum for discussion with UKZN graduates from the accounting and legal professions; provide a channel to express concerns about issues pertaining to their future plans; and encourage students upon graduation to maintain close links with the University and their Faculty.

The establishment of the Student Chapters is also seen by the College as a great opportunity to harness an interest in postgraduate studies in order to improve its research profile. Director of University Relations and Marketing Support at the Corporate Relations Division, Mr Len Mzimela unpacked the benefits of the Student Chapters and stressed that the success of the Chapters was solely dependent on student participation.



Students are now expected to approach the Alumni Relations Office with requests to address specific needs they might have.

Law students were addressed by the Dean and Deputy Dean of Law, Professors Managay Reddi and Shannon Hctor as well as law graduates and members of Convocation, Mr Sibusiso Mncwabe and Advocate Reshwant Brijraj.

Acting Head and Acting Deputy Head of the School of Accounting, Professor Phillip Stegen and Ms Patricia Shewell motivated Accounting students to take advantage of the benefits provided

by Student Chapters. Members of the Accounting profession Mr Thami Zondi and Dr Pravin Thakur spoke to students about various projects that they could deliver to assist students to gain insight into the practical aspects of the profession.

Zondi also motivated students to partake in other leadership activities at the University, including the Students' Representative Council and Students in Free Enterprise. He emphasised that these activities contribute in the development of a well rounded student.



UKZN's Alumni Relations Office staff welcome alumni to the film preview in Pietermaritzburg.

Film preview

UKZN alumni who are based in the Pietermaritzburg region reunited on August 31 at an exclusive preview of the American comedy *Bad Teacher*. Around 100 alumni seized the opportunity to network and reconnect with their *alma mater*.

Corporate Relations Divisions' Director of University Relations and Marketing Support, Mr Len Mzimela reminded attendees that they represent 'the great' which has come out of the University, and outlined some of the Institution's latest groundbreaking achievements and developments.

Executive Member of Convocation, Advocate Reshwant Brijraj invited alumni to be 'hands-on' with the University and urged them to be proud members of Convocation.

2011 ALUMNUS ASSOCIATION IN EUROPE FUNCTION

Caroline Harben – UK Chair

The second Wednesday in September has been the day on which the European Alumnus Association of UKZN has had its annual function in London for the past seven or eight years. 2011 was no exception, and South Africa House in Trafalgar was again its wonderful venue.

This year we were delighted to have with us new visitors from the University: the Executive Director of Corporate Relations, Ms Nomonde Mbadi, and Mr. Andre Young, Vice-President of Convocation

The number of active members and the demographics of the Association have both grown and broadened in recent years. About 75 people attended the function this year, both old faces and new joining the growing group of loyal UKZN alumni from all over the UK.

The speaker for this year was UKZN alumnus, Adrian Furnham, now Professor of Psychology at University College London. His topic "What's the use of going to University? Some unorthodox views on higher education and personal reflections on the former University of Natal" was entertaining, thought-provoking and poignant, and was



(left to right) Ms Nomonde Mbadi (Executive Director: Corporate Relations) with Ms Minky Mathe and Ms Sebenzile Dlamini at the European Alumnus Association function.

much appreciated by guests. He talked of how passion for his subjects – and he has three doctorates – had been inspired by great teachers and had made his "extended" learning years a valuable teacher in itself. On the former University of Natal, he gave a very balanced view of its strengths and challenges, and honoured educators who had come to UN from a wide range of other universities, both local and international.

The Association is looking for volunteers on two fronts: firstly, to help with the running of the annual function, and secondly, for anyone who might be interested in "mentoring" new arrivals in the UK on how to manoeuvre the weird and wonderful ways of the British! Please could anyone so inclined get in touch with me at harbenafrika@aol.com.

Project Management Workshop

Alumni Relations hosted a two-day Project Management Workshop for alumni on the Westville campus on June 9 and 10. Training and development consultants, Vani Moodley and Associates designed and implemented the Workshop. Facilitators, Ms Vani Moodley and Mr Thulani Ngcobo, kept the group excited and expanded their knowledge on project management (PM).



Participants practice the principles of Project Management as they build a domino tower.

The first day focused on the administrative aspects of PM such as: project lifecycle, strategic planning, scenario planning, time management, legal constraints and monitoring and evaluation. The second and last day focused on the fundamental aspect of PM; people management. This covered lessons on leadership, teamwork, perceptions and attitudes and operating at maximum potential.

Alumni workshops are centered around teaching and learning through dialogue and active engagement with a series of tasks. This Workshop was no exception, as the participants were grouped into task teams that competed against one another for various titles and awards. The first task was to build a tall domino tower that could stand the weight of a glass. The second task required teams to produce paper envelopes of exceptional quality under time constraints (which they were to sell for a profit).

The Workshop empowered professionals currently managing projects, and it brought new perspectives for those who are yet to encounter responsibilities requiring PM strategies and background. Participants also received course materials for them to recapitulate the lessons learnt in their work places.

Salisbury Island Reunion brings back Memories

A jubilant group of alumni gathered at the 50th Anniversary Reunion Banquet of the University College for Indians, Salisbury Island on June 25.

Classmates, colleagues and friends met, some for the first time after 50 years to remember the good and tough times they had in their endeavour to get an education within the confines of apartheid South Africa.

The University College for Indians opened its doors in 1961 with 39 students. The first student to be registered, Dr Vinaychandra Bhagattjee, said that being on the Island was a learning experience and that the bad times they experienced had encouraged people to achieve. He added that being at the Reunion made him feel real happiness again, and he got to see some people he has not seen in a long time. 'Not one student was a loser on the Island,' he added.

The College was part of the plan of "Grand Apartheid" espoused by the ruling Nationalist Government which relentlessly pushed its policy of racial segregation. After 10 years of turbulent existence the College closed down and it was reincarnated as the University of Durban-Westville in 1972.

The purpose of the Reunion, held at Sibaya, north of Durban, was not only to celebrate the reuniting of old friends but also to remember the lives of people who have since passed on and to reflect on the trials and tribulation that students endured on the Island.

In a book *Reflections*, produced for the Reunion, the Chairperson of the Salisbury Island Committee 2011, Ms Jenny Maharaj, says: 'The divergent and enriched contradictions of the Island as an institution, brought about a strange spirit of unity and connection that permeated the campus and spoke out vociferously when it had to be confrontational.

'The campus cafeteria served as the



First student on the Island, Dr Vinaychandra Bhagattjee, his friend Mr Gunvant Govindjee and his wife Mrs Prabha Bhagattjee.

"parliament" and "nerve centre" for resistance ... It was in the cafeteria and in the corridors of the hostels that all the secret planning took place, sometimes under the guise of fun, laughter and frolic,' she added.

Each table at the Reunion Banquet was given a theme that corresponded to the experiences people had on the Island. Many made lifetime friends and some even found their spouses on the Island. The men remembered the punishment they would be given or be sent home if they were not wearing a tie, and women remembered being forced to wear raincoats if they were pregnant.

Independent Newspapers Editor, Mr Dennis Pather said that during those times it was inculcated in students that they were Indian. He added that they survived all of the intentions of the apartheid government to Indianise them.

One of the students on the Island,

Dr Betty Govinden from the Faculty of Education at UKZN said: 'In a strange way, I am what I am today because of, and in spite of, Salisbury Island. Learning and unlearning I continue to this day, to build and break on the yesterdays I travelled on the Island.'

The night ended with dancing, meeting friends and lots of picture taking so that the memories are never lost. Maharaj also thanked the national and regional Reunion Committees for their tireless contributions to the Reunion and Corporate Relations' Alumni Relations Office for helping them with key logistical issues.

On the next day, a trip on the ferry out to the Island was organised for those that were part of the Reunion and their families.



Facilitators, Ms Marie Odendaal and Mr Mandla Ndaba, assist the group of participants in completing a teamwork exercise.

Leadership Workshop

A two-day Leadership Workshop for alumni organised by Alumni Relations and facilitated by Ms Marie Odendaal and Mr Mandla Ndaba of the Student Leadership Development Office took place on the Westville campus from May 30-31.

Participants ranged from recent April 2011 graduates to those with a few years work experience. The participants, a number of whom had travelled from various parts of KwaZulu-Natal, discovered the value of effective communication and personal development, while tackling issues of diversity, teamwork and conflict management.

The wide range of participants in terms of demographics, work experience, sector and level of management allowed for interesting debates around leadership challenges.

Feedback on the Workshop included 'extremely interesting', 'packed with essential information' and 'a real learning curve.'

Markets of Warwick Tour

The Alumni Relations Office in collaboration with the UKZN Durban Alumni Association Committee arranged a tour of the "Markets of Warwick" in Durban on July 8 for alumni. The tour was co-ordinated by Project Officer: Phumzile Zulu and led by well-informed tour guides.

Fifty two alumni and friends went on the tour. The tour commenced with a detailed introduction and a brief history of the markets by the tour guides.

The Markets of Warwick include between 5 000 and 8 000 vendors trading in several distinct markets. This is currently the only formally structured market area in a public space of this magnitude. The products range from bead work, to traditional arts and crafts, traditional cuisine, fresh produce, music and entertainment merchandise, clothing, accessories, and traditional medicine. The tour is a 2.5 hr interactive walking tour.

These markets demonstrate the

multiculturalism of our city in a vibrant way. The following Markets were visited in this tour:

The Bead Market, which offers bead work hand crafted by the vendors themselves.

Berea Station Market, which exhibits traditional isiZulu spears and shields and religious attire as well as DVDs, shoes, wallets and bags.

The Bovine Head Cooking Market, at which alumni got to sample a cooked portion of the authentic isiZulu delicacy bovine (cow) head.

The Brook Street Market, which sells a variety of brightly coloured pinafores, traditional isiZulu hats, shoes, bags and household products.

The historic Victoria Street Market, with its small, individually-owned stores selling jewellery, spices, skin products, traditional arts and crafts and bead work.

The Music Bridge, with its energetic



rhythms of local and international sounds.

The 100 year-old Early morning Market, which boasts more than 670 stalls selling a variety of fresh products, spices, flowers and live poultry.

The Herb Market, which is unique to Durban and highlights the difference between Western and African Medicine.

The Impepho Market, where traders sell balls of white and red lime mined from iNdwedwe. The lime is used to identify trainee and recently qualified izangoma (traditional healers). Other traders sell impepho, traditional incense used to facilitate communication with one's ancestors.

Calling all MBChB graduates of 1982/83

A steering committee of classmates from the final year Medical School Class of 1982 is planning a 30th year class reunion for 2012. All interested classmates of the final year MBChB Class of 1982 are urgently requested to send their email and mobile phone numbers to committee member Dr Vadi Govender at vadi@jaywalk.com or call him on **082 857 3963**. We would be most grateful if you would also send your contact details to the Alumni Relations office so that we may update our records.

Send to: alumni@ukzn.ac.za or govenderd@ukzn.ac.za



Richards Bay Luncheon reunites UKZN alumni

Sixty-five UKZN alumni residing in the north coast of KwaZulu-Natal enjoyed a first-time opportunity to reunite on July 23. An alumni lunch was organised at the Protea Hotel Waterfront in Richards Bay by the Alumni Relations Office.

Director for University Relations and Marketing Support, Mr Len Mzimela announced that this year the University is launching student chapter associations with the aim of setting up functional networks. 'We are helping students and alumni get plugged onto the development of the University both professionally and academically,' he said.

Mzimela also highlighted some of the University's successful partnerships with alumni in Cape Town, Johannesburg, London and New York among others.

Lobbying for an active alumni body, UKZN Convocation Executive Member, Mr Sifiso Mncube asked: 'Are we becoming a selfish nation as South Africa?' Speaking on the weekend following Mandela Day which encourages South Africans to give 67minutes of their time to others,

Mncube said that although the idea behind Mandela Day is to be lauded, 'the stipulated 67minutes just simply is not enough'.

He expressed concern about South Africa's high unemployment rate and the fact that, while some graduates are deemed unemployable 'yet employers talk about skills shortages'. He encouraged UKZN alumni to become role models to youngsters and proposed that each graduate devote themselves to assisting at least one child the best way they can.

Executive Director: Corporate Relations Division, Ms Nomonde Mbadi said the lesson is that 67minutes is not enough, and encouraged alumni to give back their alma mater and build the nation.

This is set to become an annual event on the Alumni Relations calendar.

ClassNotes

Keeping in touch!

Class Notes is a collection of short biographies sent to us by alumni from all over the world, highlighting their personal and professional achievements. Through these notes, alumni keep in touch and find old friends. Send contributions (maximum of 10 lines) to govenderd@ukzn.ac.za.

1950s

COLIN TATZ - BA'54, BA(Hon)'55, MA'60, DLaw'97

did his PhD at the Australian National University (ANU), Canberra. His field was Aboriginal administration, a continuation, so to speak, of his *Shadow and Substance in South Africa* book published by Natal University Press in 1962. From ANU he moved to Monash University in Melbourne and founded what is now the Centre for Australian Indigenous Studies. He founded a Politics Department at the rural University of New England in Armidale, and then took up the Politics chair at Macquarie University in Sydney, where he founded a Centre for Comparative Genocide Studies there in 1993, now the Australian Institute for Holocaust and Genocide Studies. Colin is currently a Visiting Fellow at the ANU. The former University of Natal awarded him an honorary Doctor of Laws in 1994 and he became an Officer of the Order of Australia in 1997.

Email: colintatz@gmail.com

1970s

RONIT LOEWENSTERN - BA'76

would love to hear from fellow classmates either via email or on Facebook. She is now living in London with her daughter after many years as a successful journalist and sub-editor for a variety of newspapers and magazines. She is retired and is doing community work within her neighbourhood.

Email: ronstern53@yahoo.co.uk

JEROME TRURAN - BSc'78, BSc(Hon)'83

Jerome Truran and Mat Carlisle, both UKZN alumni, participated in the Sella Descent canoe race (Spain) again, after winning it in 1978 as part of the British Team, the first 'Britons' to win the race, South Africa being banned from international competition at the time. This year being the 75th anniversary of the race, the Spanish Canoe Federation invited all past winners to compete, so it was a unique opportunity to meet old paddling friends again, after 33 yrs. They won in their age group (the category of a combined age of over 100).

Email: jerometruran@shaw.ca

SUZANNE CUSSENS (NEE MANSON-SMITH) - BSc'79

taught in Pietermaritzburg. She married Richard Cussons in 1979, and they moved to the UK in 1982. Sue has helped with the bookkeeping, buying and administration of the business which Richard ran for many years; studied Ancient Greek with the Open University, and is now finishing her training to become a Christian Counsellor. Richard graduated with a Theology Honours Degree, and lectured Religious Studies at a College, but is currently finishing his Masters dissertation. They would be delighted if anyone who remembers them would get in touch.

Email: sue.cussons@ntlworld.com

MAHOMED MAHOMED - MBChB'79, Dip(HSM)'96

worked in Mc Cords Hospital and King Edward VIII Hospital rotating through all major disciplines, then the one year as a lecturer in anatomy at Nelson R Mandela School of Medicine and entered private family practice in 1984 in Isipingo. He obtained his Masters in Family Practice (now converted to FCFP) in 1989 and later completed the DHSM. He is presently awaiting results of his dissertation/ thesis on Health Legislation towards the MPH (UKZN).

Email: mfm@medis.co.za

1980s

MITCHELL SCOTT - BSc'82, BSc(Hon)'83, MMed'10

is in private medical practice in Pinetown / Kloof and part of the sessional staff of the Nelson R Mandela School of Medicine at UKZN. Mitchell is busy with an MD (TUKS) and has three sons.

Email: mitchscott@vodamail.co.za

JACINTA BASSUDAY - BProc'83

completed Articles of Clerkship with Attorney Charles Pillai & Co. She commenced private practice as an attorney in Chatsworth and was admitted as a Conveyancer and Notary Public in 2004. She is presently a Legal Manager at Standard Bank Head Office in Johannesburg, specialising in Deceased Estates and Trusts.

Email: Jacinta.Bassuday@standardbank.co.za

BRUCE NOZAIC - BSc'85, HDE(PG)'86, BSc(Hons)'93

is Head of Physical Science at St Stithians Boys College in Johannesburg. He was recently

appointed as National Examiner for Chemistry for the Independent Examinations Board (IEB) and is a member of the National Subject Forum for Physical Science for the IEB.

Email: brozaic@stithian.com

BRETT HERRON - BA'88, LLB'90

completed his articles in Durban and was admitted as an attorney in 1994. He practised law in Cape Town until 1997 when he moved to New York City. Brett returned to Cape Town at the end of 2001 and became involved in legal skills training - he is the owner of the South African Law School. In 2009 he was elected to the City of Cape Town Council representing the Independent Democrats (ID). He was appointed as a Member of the Mayoral Committee (MMC) for Community Services in 2010. In 2011 he was re-elected to the Council and was appointed as the MMC for Transport.

Email: bherron@lawschool.co.za

MATHIAS SCHLICHTING - MLaw'89

has been working as an Attorney since 1986 in Hamburg, Germany. He has specialised in commercial law, company law, contract law and the law of insolvency. He is also on the Law Committee of the Chamber of Commerce, Hamburg and is a member of the LIONS-Club Hamburg-Waterkant.

Email: mathias.schlichting@bvm-law.de

1990s

ALEX COUTTS - PhD(Ed)'90

taught at Grosvenor Boys High School and later at Northlands (Northwood) Boys High School. He served on the staff of the Edgewood College of Education for 21 years, progressing from lecturer to become Head of nine Departments. He became Vice- and finally Deputy Rector. After retiring from teacher education he trained tourist guides for KwaZulu-Natal and South Africa, winning the Extraordinary Service Excellence Award of the KwaZulu-Natal Tourism body. Alex served as Chairman of their Research Advisory Committee for ten years and co-authored the motivation that secured Natal and South Africa the UN Ulysses Award for Tourism. South Africa was the first country in Africa to win the Award. He is currently working in the field of Cognitive Development.

Email: acoutts@iafrica.com

DUDU MSOMI - BA'92, BA(Hon)'93

is founder and Chief Executive of Busara Leadership Partners, a strategic advisory service and consulting company. Dudu also presents seminars and provides one-on-one coaching and works with small groups. She has been published in diverse media and academic journals on such topics as leadership, corporate governance, boards and entrepreneurship. She holds board directorships in the Financial Services Board (FSB) and the Agricultural Research Council (ARC).

Email: dudum@busaraleadershippartners.co.za

LAVINDHAN YENGOPAL - BProc'92

completed his articles from 1991 to 1993 and then got a job as a Public Prosecutor in the Port Shepstone Court. He became an Admitted Attorney of the High Court of South Africa in 1999, was appointed Magistrate in 2000 and is presently Head of Judiciary, Izingolweni Magistrates Court, on the KwaZulu-Natal South Coast.

Email: LYengopal@justice.gov.za

PRAVINE NAIDOO - BProc'95, DBA'06

is the Chairperson of the Regulatory and Professionalisation Committee of the Institute for Local Government Management of South Africa (ILGM) and was recently afforded the opportunity to initiate and pioneer the drafting of new legislation for submission to Parliament which would regulate all municipal managers and senior managers in municipalities in South Africa. Pravine is now based in Paarl, Western Cape and is the Executive Director: Strategic Services Drakenstein Municipality.

Email: Pravine.Naidoo@drakenstein.gov.za

2000s

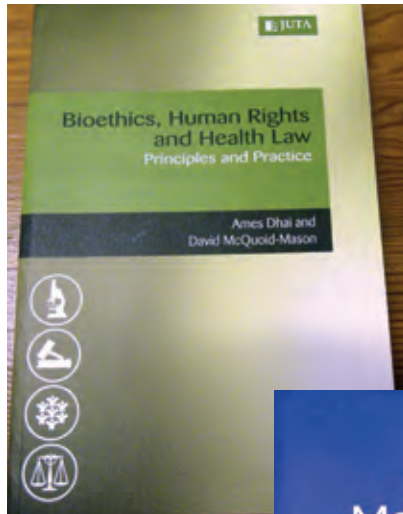
JASON MYHILL - BScEng (Electronic)'00

was appointed Deputy Chair of the Institute of Directors in the Western Cape and directs a company which has become one of the largest online sellers of LED lights in South Africa.

Email: jason@dynaminds.co.za

Bookshelf

On the



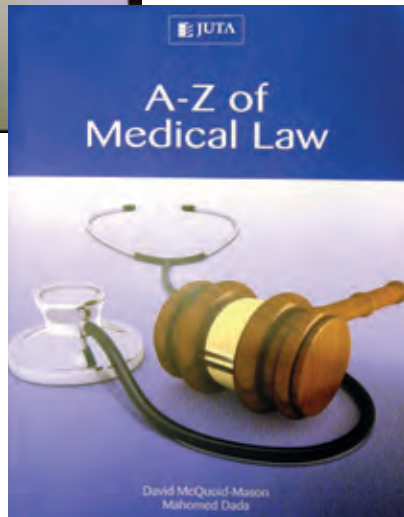
BIOETHICS, HUMAN RIGHTS AND HEALTH LAW: PRINCIPLES AND PRACTICE

by **David McQuoid-Mason** and **Ames Dhai**

A-Z OF MEDICAL LAW

by **David McQuoid-Mason** and **Mahomed Dada**

BioEthics, Human Rights and Health Law: Principles and Practice provides healthcare and legal practitioners with the theory and practical application necessary to understand and apply bioethics, human rights and health law to their present and future work.



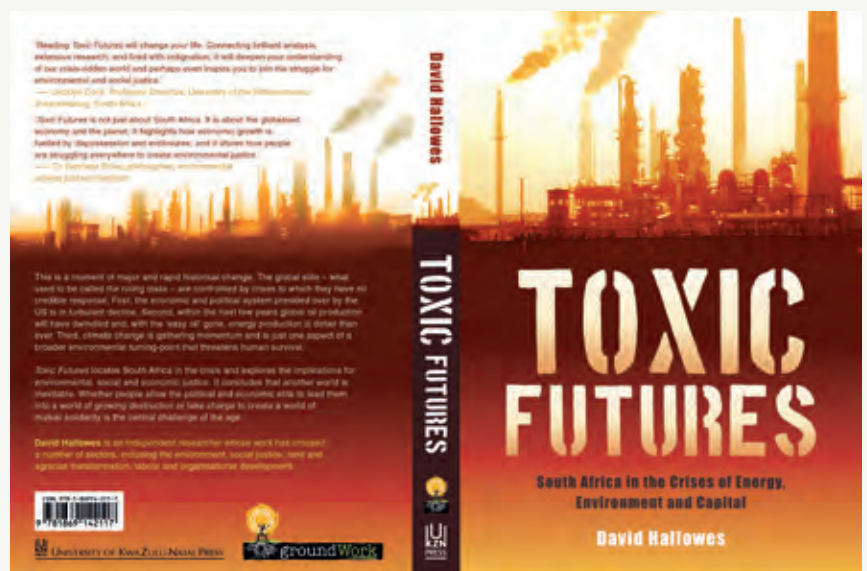
The *A-Z of Medical Law* is designed to assist medical practitioners to handle legal issues they face in daily practice, and covers topics from abandonment of patients to Zulu law. The book is also a useful resource for lawyers and undergraduate and post-graduate medical and law students.

David McQuoid-Mason is a Senior Research Associate and Acting Director of the Centre for Socio-Legal Studies at UKZN.

Ames Dhai is Director of the Steve Biko Centre for Bioethics at the University of the Witwatersrand.

Mahomed Dada is the former Head of the Department of Forensic Medicine at UKZN's Nelson R Mandela School of Medicine.

Available at Juta & Co. Ltd. and other academic book stores.



ATLAS OF CLIMATE CHANGE AND THE SOUTH AFRICAN AGRICULTURE SECTOR: A 2010 PERSPECTIVE

by **Roland Schulze**

The Department of Agriculture, Forestry and Fisheries recently published a new 400-page book by one of South Africa's top water scientists. *Atlas of Climate Change and the South African Agriculture Sector: A 2010 perspective* is the first comprehensive document on this subject.

The book deals with the dynamic and important relationship of climate to agriculture and comprises a review of recent studies followed by an assessment of the significance of climate change on the South African agricultural scene.

In addition, it discusses the symbiotic interrelationship of the impact of water on agriculture *versus* those of agriculture on water.

Roland Schulze is Emeritus Professor in the School of Bioresources Engineering and Environmental Hydrology at UKZN.

Available from the Department of Agriculture, Forestry and Fisheries, Pretoria.

Tel: 012 319 6683/079 310 1234

Email: seneom@daff.gov.za



TOXIC FUTURES: SOUTH AFRICA IN THE CRISES OF ENERGY, ENVIRONMENT AND CAPITAL

by **David Hallows**

Toxic Futures is about the world brought into being through the collusion of state and corporate power. Maintaining profit has relied on institutionalised fraud on the one hand and a war on the poor and on the environment on the other. Resistance is growing at all scales and, however chaotic, constitutes a fourth dimension of the elite crisis.

This book locates South Africa in the crisis and explores the implications for environmental, social and economic justice. It concludes that another world is inevitable. Whether people allow the political and economic elite to lead them into a world of growing destruction or take charge to create a world of mutual solidarity is the central challenge of the age.

David Hallows is an independent researcher who works mainly with civil society organisations committed to social justice. He has written extensively on environmental justice, notably in *The groundWork Report*, an annual publication exploring the state of environmental (in)justice.

Available from the UKZN Press and leading bookstores.

UNITE



An investment in human Capital

UNITE's new building, due for completion in November, is designed not only to show how nature and engineering can interact with each other, but to open the minds of students to ideas that go beyond conservative thinking and add value to the total teaching and learning enterprise at UKZN.

'It's about investing in human capital,' says the Head of the UNITE Programme, former school teacher, Noel Powell. 'It's about developing the skills of Black learners, who under normal circumstance would not have the opportunity or the money to access higher learning.'





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