

CENTRE OF EXCELLENCE
IN FOOD SECURITY

BIENNIAL REPORT 2017 - 2018



DSI-NRF
Centre of Excellence
in Food Security

Centre of Excellence in Food Security

The Department of Science & Innovation-National Research Foundation Centre of Excellence in Food Security (CoE-FS) was launched on 15 April 2014 to undertake innovative research to enable South Africa to tackle the challenge of food security and nutrition. The Centre – hosted by the University of the Western Cape and co-hosted by the University of Pretoria – is a virtual organisation that brings together the expertise of numerous South African and international institutions and over 100 researchers across various disciplines. The mission of the Centre is to undertake research, build capacity, and share widely any knowledge and learnings on how a sustainable food system can be achieved to realise food security for poor, vulnerable, and marginal populations. It is the first national Centre of Excellence to be hosted at a historically black university.

The scope of work for the Centre's research activities for 2017 and 2018 were informed by three questions:



1. How is the global and national food system changing and how does this affect the sustainability, availability, access and attributes of food?



2. Who are the 'food insecure', where are they located, what are their choices, strategies and opportunities when seeking food security, health, and well-being and how do these change in response to the changing food system?



3. What policies, technologies, interventions and products enable access to affordable, nutritious and safe food in ecological, economic, social and politically sustainable ways?

Prof Julian May explains research approaches to address food security in South Africa



 **Food Security SA**
 **FoodSecurity_za**
 **www.foodsecurity.ac.za**

School of Government Building
University of the Western Cape
Robert Sobukwe Road, Bellville
Phone: +27 21 959 3817
Email: foodsecurity@uwc.ac.za



CONTENTS

Executive Structure	3
Abbreviations	5
Directors' Report	6-7
Highlights & Achievements	8-10
Output & Engagement Activities	11
CoE-FS Events: 2017 & 2018	14-15
Research Programmes	16-17
Programme 1: SYSTEMS	18-21
Programme 2: INNOVATION	22-27
Programme 3: SAFETY	28-31
Programme 4: PLATES	32-37
Programme 5: CHILDREN	38-41
Programme 6: POLICY	42-45
Programme 7: SYMBOLS	46-49
Programme 8: POLITICS	50-53
Programme 9: SARChI	54-57
Programme 10: NOURICITY	58-61
Special Projects	62-67
Looking Ahead	68-69
Financial Information	70-71



ABOUT THE COVER

Bambara groundnut is a grain legume grown mainly by subsistence farmers in sub-Saharan Africa.

It is known to be extremely hardy, and produces "reasonable yields even under conditions of drought and low soil fertility", according to the Food and Agriculture Organisation (FAO) of the United Nations.

The groundnut is indigenous to sub-Saharan Africa, but is also grown, if to a lesser extent, in several Asian countries. It is beloved by small-scale farmers as it copes well in poor-quality soils and with drought; its nitrogen-fixing roots, which help replenish soil nutrients, make it suitable in intercropping systems with maize, millet, sorghum, cassava, yam, etc; and its leaves are rich in nitrogen and potassium and so make an excellent source of animal feed. Bambara groundnut is also known as a "complete food" – its seeds contain around 63% carbohydrate, 19% protein and 6.5% fat, making it an invaluable source of dietary protein.

EXECUTIVE STRUCTURE

DIRECTOR & CO-DIRECTOR

The Director and Co-Director are responsible for management of the CoE, supported by a Management Committee (MANCO) comprised of Principal Investigators (PIs).

Director Prof Julian May, University of the Western Cape
Co-director Prof Lise Korsten, University of Pretoria

MANAGEMENT COMMITTEE

A Management Committee (MANCO) comprising the Centre's Principal Investigators (PIs) meets every second month. The MANCO is responsible for preparing and implementing the Annual Business Plan. PIs coordinate the projects undertaken by the CoE-FS, which are implemented as Work Packages (WPs) and undertaken by teams of researchers and postgraduate students.

STEERING COMMITTEE

The Steering Committee (SteerCom) - comprised of the DSI, NRF, the Deputy Vice Chancellors (DVC) of UWC and UP and a group of international and national experts - provides governance oversight to ensure transparency and accountability. The Steering Committee for 2017 and 2018 (unless otherwise indicated) comprised:

Co-Chairperson	Prof Jose Frantz/Prof Burtram Fielding (UWC)
Co-Chairperson	Prof Stephanie Burton/Dr Nthabiseng Taole (UP)
Director	Prof Julian May (UWC)
Co-Director	Prof Lise Korsten (UP)
DSI representative	Dr Bheki Hadebe/ Ms Rose Msiza
NRF representative	Dr Makobetsa Khathi (2017); Mr Nathan Sassman (2018)
Member	Prof Lawrence Haddad (GAIN)
Member	Prof Carlos Monteiro (University of Sao Paulo), resigned 30/12/2016
Member	Ms Wendy Knowler (consumer journalist)
Member	Dr Patrick Caron (CIRAD)
Member	Prof Renosi Mokate (UNISA)
Member	Prof David Sanders (Emeritus Prof, UWC), appointed 09/06/2017
Member	Ms Bongiwe Njobe (independent consultant)

SUPPORT TEAM

Dr Elain Sinden, Centre Manager
 Ms Elain Petersen, Co-ordinator: Finance & Budgeting
 Ms Mologadi Makwela, Communications, Marketing and Engagement Manager





ABBREVIATIONS

ACC	African Centre for Cities, UCT	ISD	Institute for Social Development, UWC
ACDS	African Centre for Disaster Studies, NWU	ISO	International Standards Organisation
ART	Antiretroviral Treatment	MRC	Medical Research Council
ARUA	African Research Universities Alliance	NMU	Nelson Mandela University
ATA	Agriculture Transformation in Africa	NRF	National Research Foundation
CIRAD	French Agricultural Research Centre for International Development	NSNP	National School Nutrition Programme
CoE-FS	Centre of Excellence in Food Security	NWU	North-West University
CCRED	Centre for Competition, Regulation and Economic Development	OPLWH	Older People Living with HIV
CSA	Climate Smart Agriculture	PLAAS	Institute for Poverty, Land and Agrarian Studies, UWC
CSG	Child Support Grant	ROFE	Researching Obesogenic Food Environment, UWC
DSI	Department of Science & Innovation	SAAFoST	South African Association for Food Science & Technology
EED	Environmental Enteric Dysfunction	SARCHI	South African Research Chairs Initiative
ESSM	MRC/UCT Research Unit for Exercise Science & Sports Medicine (ESSM)	SES	Socioeconomic Status
FABI	Forestry & Agricultural Biotechnology Institute, UP	SLF	Sustainable Livelihoods Foundation
FBO	Faith-Based Organisation	SMME	Small, Medium & Micro Enterprise
Food EPI	Food Environment Policy Index	SoG	School of Government, UWC
GAIN	Global Alliance for Improved Nutrition	SOPH	School of Public Health, UWC
GFS	Global Food Security	TAC	Total Allowable Catch
GovInn	Centre for the Study of Governance Innovation, UP	UCT	University of Cape Town
IDRC	International Development Research	UJ	University of Johannesburg
		UL	University of Limpopo
		UP	University of Pretoria
		UNISA	University of South Africa
		UWC	University of the Western Cape

DIRECTORS' REPORT

Prof Julian May & Prof Lise Korsten



As expected, the years 2017 and 2018, were packed with milestones and challenges.

Let's talk about our research HIGHLIGHTS first. Since 2016, we have focused on and committed to a comprehensive and integrated programme of research. As a result, we have not issued further open calls for research proposals. The majority of projects that were selected for funding at the inception of the CoE-FS were completed during 2018, with only a small number of projects continuing into 2019. As such, 2019 will be a transition year pending changes from our midterm review. During 2018 we began synthesising these programmes in order to reassess the research questions that were proposed at the establishment of the CoE-FS, and to evaluate whether we have responded directly and substantively to those questions. Several Working Papers on completed research projects have been prepared and published on the CoE-FS website.

In the meantime, our researchers

were pushing ahead. In 2018, they published 33 papers in accredited journals and peer-reviewed books, an increase of 65% on the number published in 2017. Eight of these publications were in journals with an Impact Factor greater than 3.0. A total of 130 students were involved in our projects, of which 65 were directly funded by bursaries awarded from the NRF grant. The Centre also supported 13 postdoctoral research fellows. Researchers and students presented 87 papers and posters at national and international conferences. We are particularly pleased that we were able to organise and/or contribute to 15 food security panels at these conferences.

There were a number of other notable achievements over 2017 and 2018. Towards the end of 2017, for instance, we co-hosted the 3rd Global Food Security Conference in Cape Town, an event that drew hundreds of researchers from across the globe, and by design allowed us to engage with countless researchers from elsewhere on the continent. The Conference came at an opportune time as it also allowed us to showcase the growing body of work that we

were developing within the CoE-FS, and to celebrate the award, announced shortly before, of a UNESCO Chair in African Food Systems. The latter position, held by Professor Julian May, will assist us in widening our footprint in Africa.

In 2018 we also secured an R8 million supra-institutional grant from the Mellon Foundation, allowing us to launch in 2019, a new research programme in the humanities in collaboration with UP and the University of KwaZulu-Natal. We also won a new LEAP-Agri grant for research on obesogenic food environments in South Africa, Ghana and Uganda.

Our work and network continues to grow. We currently collaborate with 20 institutions in South Africa and internationally, and have concluded agreements with more than 100 researchers and postgraduates, as well as agreements with several NGOs, including Women on Farms, the World Wildlife Fund, and Neighbourhood Farm. The expanse of our networks mean our research reaches out to institutions across Africa, as well as Europe and the Americas.

We are also making headway in expanding and deepening our social impact. Increasingly we are communicating the work of our researchers via mainstream and other media. One outcome of this process is that more of our researchers are being sought by media as expert commentators on a range of issues pertaining to food security. Furthermore, our researchers and students are giving input into policy debates, hosting keynote presentations and are facilitating workshops. We have also entered into close working relationships with organisations like the Southern African FoodLab; Women on Farms; the Parliamentary Monitoring Group; and on a project related to food insecurity among students, in collaboration with the Dullah Omar Institute at UWC. We made written submissions on the Western Cape Household Food Security and Nutrition Strategy, among other key achievements.

We also supported performances of Another One's Bread, a political satire on food security penned by award-winning playwright Mike van Graan; the play made its commercial debut at the Market Theatre in early 2018.

With student development in mind, we continue to encourage and support student participation in academic and developmental activities. In 2017, for instance, we funded student participation in the likes of the 4th International Symposium on Postharvest Pathology, the 2017 Human Development and Capabilities Conference, and the 3rd Global Food Security Conference, as well as the McGregor Poetry Festival, a community-based festival in the rural Western Cape.

CHALLENGES & OPPORTUNITIES

Notably, when considering the challenges we face, we continue to learn about the hiccups of co-hosting a national research centre. For instance, completing agreements with researchers at institutions across the country, each with their own quirks, proved to be time-consuming, and transferring funds across institutions has required that we all remain focused on our ultimate objectives. Notwithstanding these challenges, the CoE-FS managed several milestones. We've learned from our earlier lessons and have put in place the necessary administrative, governance and management processes,

but it nonetheless allowed us to unpack our business plans and detail, and to approve the allocation of our resources.

It is this collaborative spirit that has helped us, we believe, exceed most of our research targets, especially as it pertains to representation at local conferences, publications in peer-reviewed journals, and making sure that women are well represented among our researchers. By the end of 2018, women not only comprised nearly 60% the students supported by the CoE-FS, but were a key focus in many of our studies, in recognition of their central roles as breadwinners and heads of households.

We currently collaborate with 20 institutions in South Africa and internationally, and have concluded agreements with more than 100 researchers and postgraduates,

There remains areas in which we can and should improve. For instance, we are not recruiting enough young black South African researchers. Among the ways we have sought to address this is proactively seeking collaborations with historically disadvantaged institutions.





learning to accommodate the quirks of the two hosting universities. Despite these challenges, we received clean audits in both 2017 and 2018, as we have since 2014.

In 2017, we established a Scientific Sub-committee to ensure that our body of work remains at the cutting edge of research on food security. Our 2017 and 2018 Lekgotlas seemed insufficient time for us all – executives and principal investigators – to get together in the same room,

As we head into the next stages and years of the CoE-FS, we will continue to re-evaluate not only the state of food security in South Africa, but also the role of the Centre in steering both research and policy. Ultimately, our aim was and remains to learn as much as we can about food security in the country, and to make sure that policy makers have the best information and knowledge on which to make decisions that can influence whether South Africans can put food on the table or not.



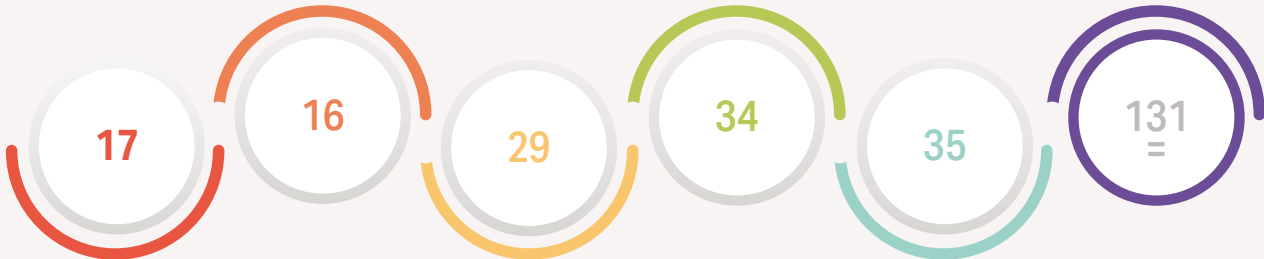
HIGHLIGHTS & ACHIEVEMENTS

NRF-BURSARY STUDENTS	2014	2015	2016	2017	2018	TOTAL
 Honours	4	4	7	3	11	29
 Masters	15	19	27	24	31	116
 Doctoral	7	8	18	20	16	69
 Postdoc Fellows	2	3	6	10	7	28
TOTAL POSTGRADUATES	28	44	58	57	65	242

NATIONAL & INTERNATIONAL STUDENT REPRESENTATION



RSA Master's & Doctoral Students



Other African Countries: Master's & Doctoral Students



NEW GRANTS

- R8 million supra-institutional grant from the Mellon Foundation for the launch in 2019 of a new research programme in the humanities in collaboration with UP and UKZN (2018)
- LEAP-Agri grant for research on obesogenic food environments in South Africa, Ghana and Uganda (2018)

THE CoE-FS & GENDER

The CoE-FS has made a concerted effort to include women in its research teams and as recipients of student bursaries. It also understands that food security is a gendered issue. According to estimates, women and girls make up 60% of the world's chronically hungry. At the same time, little progress has been made in ensuring the equal right to food for women enshrined in the United Nations' Convention on the Elimination of All Forms of Discrimination against Women. Women face discrimination both in education and employment opportunities and within the household, where their bargaining power is lower. Yet gender equality is described as instrumental to ending malnutrition and hunger. Women tend to be responsible for food preparation and childcare within the family and more likely to spend their income on food and their children's needs. The gendered aspects of food security are visible along the four pillars of food security: availability, access, utilisation and stability, as defined by the FAO.

HIGHLIGHTS & ACHIEVEMENTS

UNESCO

Chair in African Food Systems Awarded to Prof Julian May in 2017. The Chair will be inter-disciplinary with a focus on the trans-disciplinary field of food security, nutrition and food systems

19

Number of international and local conferences **organized** during 2017 and 2018

2.6:1

Number of South African students to every one student from another African country

33 & 81

Number of female students supported in 2017 & 2018, respectively. In 2018, women made up 62% of the CoE-FS's 130 funded students

62

South African women students supported by the CoE-FS in 2018, making up 47.7% of all funded students

20

Number of institutions & organisations with which the CoE-FS has collaborating agreements or memoranda of understanding

42

Black South African students supported by the CoE-FS in 2018, making up 32.3% of all funded students

25

Number of projects funded in 2017; in addition, three projects continued from 2014/2015, and six projects continued from 2016

34 & 76

Total number of black students (incl SA and non-SA). In 2018, black students made up more than 70% of all funded students

INTERNATIONAL CONFERENCES HOSTED

- 4th International Symposium on Postharvest Capabilities
- 3rd Global Food Security Conference

Prof Julian May speaking on the importance of the 3rd International Global Food Security Conference that took place from 3 - 6 December at the CTICC



OUTPUT & ENGAGEMENT ACTIVITIES

2017	2018
2	5
12	2
25	34
35	30
72	87
129	239
55	28
32	67
40	20
10	7
2	15

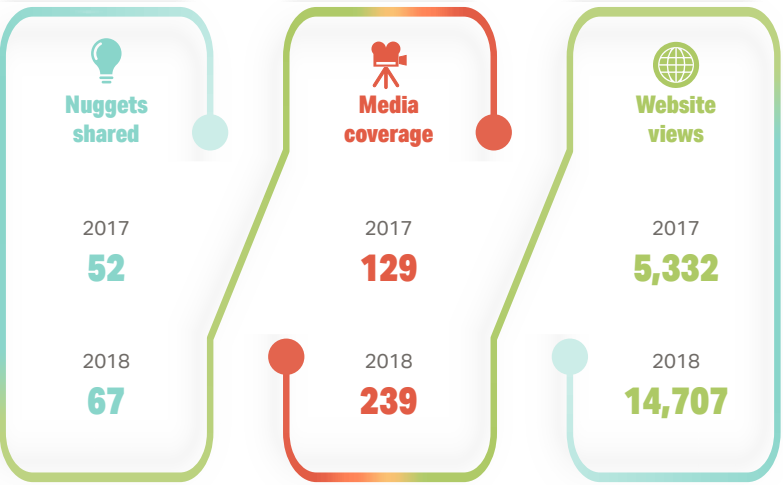
COMMUNICATION AND VISIBILITY

The Centre’s communication outputs and coverage continue to increase year on year since the drafting of the Communication and Engagement Strategy, which sets out specific approaches to execute visibility activities that would broadly profile the research undertaken at the CoE-FS. There were also notable improvements in reach on our primary communication platforms, namely the website, mailing list subscriptions and social media platforms, as well as on SoundCloud and YouTube. The YouTube channel was officially launched in December 2017 during the Global Food Security Conference, and we began to feature CoE-FS-generated and -commissioned content alongside other relevant research content.

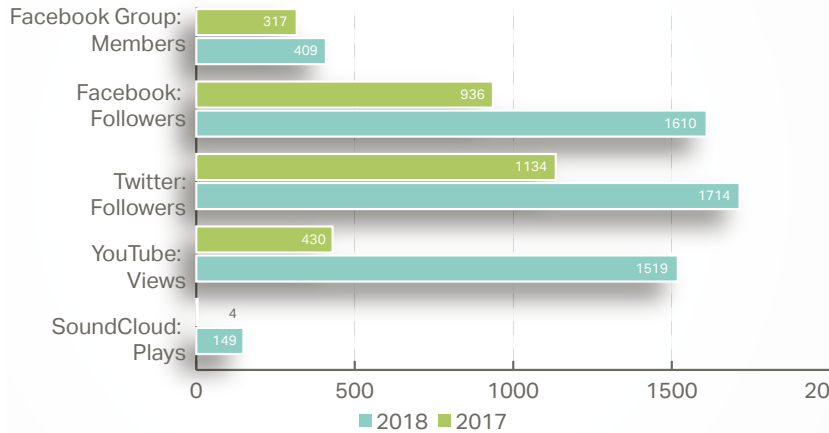
One approach that the CoE-FS has taken is to repackage its online publications – such as working papers and research reports – into research “nuggets” suitable for distribution through the Centre’s mailing lists and newsletter, and to mainstream media.

This content is also developed into social media posts for our various channels. Among these nuggets, a press release on a joint submission to the Competition Commission Inquiry by the CoE-FS and partner institutions generated the most media interest. ‘Another One’s Bread’, the play commissioned by the CoE-FS from playwright Mike van Graan, dominated media coverage in 2018. Overall, there was a clear uptick in both media coverage over 2017 compared to previous years, and we built on that momentum in 2018.

Research ‘Nuggets’



Social Media

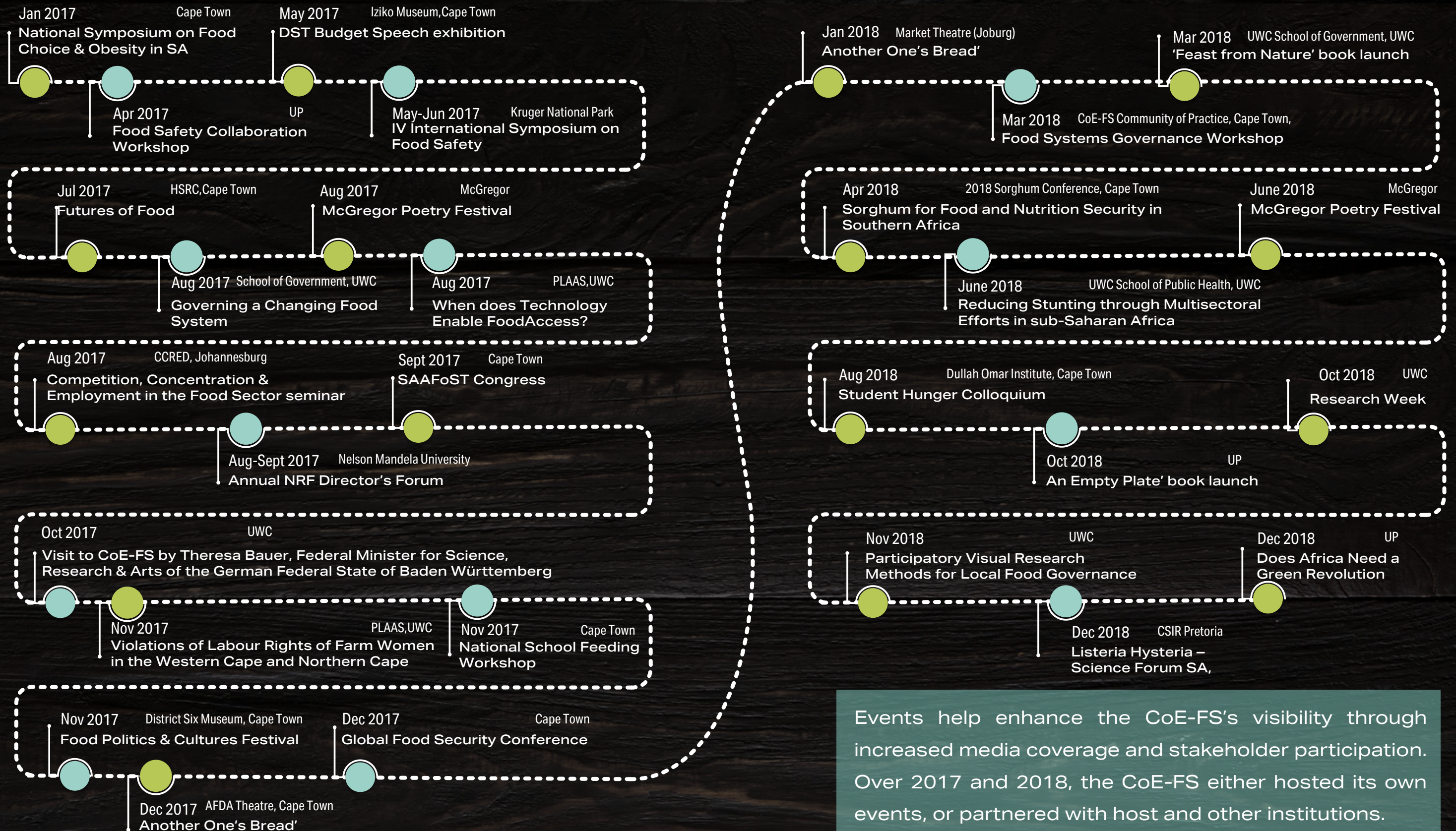


They remain the primary platforms through which the CoE-FS has sought to publicise its work. Again, the Centre’s channels have become increasingly popular over the reported years, as can be seen below. The increased use of multimedia content from the website and on YouTube and SoundCloud accounted for the increase in the numbers of people and organisations following our social media pages and channels. SoundCloud is the most recent platform in the CoE-FS social media suite, used for the sharing of podcast-type media. As the use of the platform is still new, content development is ongoing but promising.



AN OVERVIEW OF

CoE-FS EVENTS: 2017 & 2018



RESEARCH PROGRAMMES

Following its establishment in 2014, the DSI-NRF Centre of Excellence in Food Security adopted an approach of targeted food security research to address the key constraints in the South African development context.

Between 2015 and 2016, the Centre concentrated on forming an integrated research framework, moulding the initial identified key focus areas into more focussed, prioritised programmes. From 2017 – 2019, we continued with this focus on the causes (determinants), context (status quo, situation and experience of people) and consequences (impact) of food security for poor and vulnerable populations in a changing food system.

At the same time, the research takes cognisance of South Africa's the triple burden of malnutrition, and the challenges posed by poverty, inequality and unemployment in the country.

Research at the CoE-FS is organized around three research questions:

1

How is the global and national food system changing and how does this affect the sustainability, availability, access, and attributes of food?

2

Who are the 'food insecure', where are they located, what are their choices, strategies, and opportunities when seeking food security, health, and wellbeing and how do these changes in response to the changing food system?

3

What policies, technologies, interventions and products enable access to affordable, nutritious and safe food in ecological, economic, social and politically sustainable ways

The Centre's research is organised into six Core Programmes that can vary in scope and complexity. In addition to the six Programmes that are directly funded by the NRF, research also included: A Programme on the Humanities and Food Insecurity, funded by the Mellon Foundation.





PROGRAMME 1: SYSTEMS

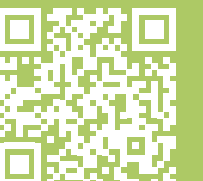
The Global and National Food System

Principal Investigators: Prof Andries du Toit, (PLAAS) and Prof Frans Swanepoel (UP)

This programme focuses on the structure and dynamics of, and the influences on the South African food system and how it is changing. The work on food system concentration has indicated a range of key areas where current food system changes in South Africa impact directly on the accessibility, price and quality of food for the vulnerable and marginalised population.

Supply side' issues such as the abundance of energy-dense, and low-nutrient ultra-processed products play a role in influencing poor people's diets.

*Prof Ruth Hall, Acting PI
speaks on understanding
the national and global food
system for food security*



2017 PROJECTS



Governing a Changing Food System – Prof Andries du Toit, UWC



Mapping the South African Agro-Food System – Prof Andries du Toit (UWC), Dr Shane Godfrey (UCT), Prof Ferdi Meyer (UP)

2018 PROJECTS

The Dynamics and Implications of Supermarket Penetration



Retail Malls, Supermarkets and Wholesalers, and Informal Trading – Dr Andrew Charman, SLF



Researching the Obesogenic Food Environment – Mr David Neves, PLAAS

Towards a Nourishing Regional Food System



Piloting a Market Observatory for Regional Food Systems – Mr Simon Roberts (CCRED, UJ)



Trade and the Utilisation of South African Anchovy and Red Eye Herring for Human Consumption – Prof Moenieba Isaacs & Prof Mafa Hara (PLAAS, UWC)

PROJECT FINDINGS & HIGHLIGHTS



Focusing on the Philippi Industrial Precinct, the study found little evidence of direct competition between informal traders and supermarkets, largely because informal traders are excluded from shopping malls, in which supermarkets are based.



Financial returns on investments to stakeholders are being prioritised over other food-related concerns.



Large food corporations are branching out into the Southern African region, increasingly changing the food environment, and nutritional habits.



While low-income households shop in bulk once a month – usually from one supermarket – high-income groups shop more frequently from different sources.



Fish species such as anchovy, red-eye herring and sardines are being underutilised as a food source. The Total Allowable Catch (TAC) of some fish are well below what could be sustainably caught. As a result, South Africa has to import raw sardines for canning, for instance.



The project will look to address knowledge gaps and data constraints about regional food markets, by bringing together cross-country data. This will include the development of a tracking system for collating existing data from a range of sources, including statistics offices, international market information systems and initiatives, an industry association, ports authorities and commodity exchanges.



The study will explore the dietary choices and food security of households, as well as seek to understand how changes in the food system shape the food environments of poor and vulnerable communities in urban and rural South Africa and Ghana.



Won a bid from the IDRC on Researching the Obesogenic Food Environment, leading to a major study on the link between food-system dynamics and the nutritional outcomes of vulnerable communities.



The expansion of formal-sector food retail into poor areas improves access to staple foods, generates public revenue and provides jobs, but can also push out informal sector livelihoods.



In post-apartheid South Africa, corporate investors and large-scale supermarket have made inroads into the township economy, capturing a share of the food market that had historically been serviced by micro-enterprises and informal street traders.



PROGRAMME 2: INNOVATION

Innovation and Technology for Enterprise Development

Principal Investigators: Prof Naushad Emmambux (UP) and
Prof Ndiko Ludidi (UWC)

The overall focus of this programme is to investigate the organisational and technological innovation of food systems – particularly as pertains to food production and processing – that is required to maintain and improve livelihoods through enterprise development for food security. One key question the programme sought to answer was: what kind of innovations and technological transformations would be necessary to improve the livelihoods of small, medium & micro enterprises (SMMEs) involved in food production, processing and distribution?

*Prof Ndiko Ludidi explains
how Knowledge generated
in university laboratories can
make a very tangible differ-
ence in the real world*



2017 PROJECTS

SMART Food Processing



Project leaders: Prof Naushad Emmambux & Prof Gyebi Duodo, Department of Consumer & Food Sciences, UP

Drought Responses in Cereals & Legumes



Project leader: Prof Ndiko Ludidi, Department of Biotechnology, UWC

Reclamation of Heavy Metal Contamination of Soils



Project leader: Dr Marshall Keyster, Department of Biotechnology, UWC

Fungi and Mycotoxins in Crops



Project leader: Prof Theresa Aveling, Forestry & Agricultural Biotechnology Institute, UP

Fungi and Mycotoxins in Crops



Project leader: Prof Ndiko Ludidi, Department of Biotechnology, UWC

Cropping Systems and Soil Health in South Africa



Project leader: Prof Nico Labuschagne, Department of Plant and Soil Sciences, UP

Climate Change Resilient Livestock



Project leader: Prof Voster Muchenje, Department of Livestock & Pasture Science, UFH

Food Sovereignty and Organic Farming



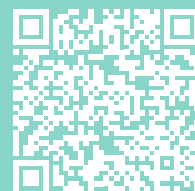
Project leader: Prof Raymond Auerbach, School of Natural Resource Management, NMMU

Staple Cereals & Legumes Tolerance to Drought & Salinity



Project leader: Prof Ndiko Ludidi, UWC

Dr Marshall Keyster, talking about his study exploring whether different canola cultivars would be suitable to be used as phytoremediation for soils containing high Vanadium levels.



PROJECT FINDINGS & HIGHLIGHTS



The project looked at how SMART food could be used to reduce diet-related non-communicable diseases; and sought to identify appropriate technologies for the manufacturing of SMART by SMMEs. 'SMART' food is defined as food that is safe, affordable, ready to eat, convenient, consumer-driven and nutritious for children and adults in South Africa.



The study has identified numerous plants that could potentially be used for its phytoremediation characteristics, i.e. its ability to extract toxic-heavy metals from soil; and has also looked into the viability of using these rehabilitated soils to grow important food crops.



Researchers are beginning to understand the role that a signalling compound produced naturally from canola plays in improving the drought-tolerance in maize.



Research is looking into the use of the Bambara groundnut – described as a 'complete food' because of its high nutritional value, but is still not used widely as a food source.



Beef cattle breeds derived from Sanga and Zebu cattle have evolved under difficult conditions, and some can now overcome environmental challenges like internal parasites, tsetse flies and tick-borne diseases; this project looks at how those traits can be improved for today's dry arid environments.



Researchers are hoping to better protect maize crops against soil fungi such as *Aspergillus flavus* and *Fusarium verticillioides*, which not only decrease maize crops, but also produce mycotoxins that pose serious health problems for animals and humans that consume the maize.



Extrusion cooking, solar drying, microwave processing, fermentation and micronization are among the technologies being explored for the production of SMART foods and/or ingredients.



Many subsistence farmers lack the means to ensure they have the best seeds available for key crops like maize, legumes and vegetables; one study looks at which storage conditions could ensure the best seed viability and vigour.



Building on the Long-term Organic Comparative Farming Systems Research Trials (the Saasveld Trials) on the George Campus of NMMU, this study has shown that organic farming has the potential to match the yields of conventional farming; the aim is to expand organic farming at both local (such as in food gardens) and national level.



The aim of a study on soil health – using a site on NMMU's George campus – is to develop a protocol for the testing of soil health, which is a key determinant of sustainable crop production.



A study is looking into the genetic make-up of two cowpea varieties to understand what makes one more drought-tolerant than the other.

2018 PROJECTS

SMART Food Processing

Project leader: Prof Naushad Emmambux & Prof Gyebi Duodu, UP

Drought Responses in Cereals and Legumes

Project leader: Prof Ndiko Ludidi, UWC

Reclamation of Heavy Metal Contamination of Soils

Project leader: Dr Marshall Keyster, UWC

Fungi and Mycotoxins in Crops

Project leader: Prof Theresa Aveling, UP

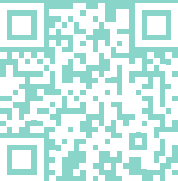
Cropping Systems and Soil Health in South Africa

Project leader: Prof Nico Labuschagne, Department of Plant & Soil Sciences, UP

Climate Change Resilient Livestock

Project leader: Prof Kennedy Dzama, Department of Animal Sciences, Stellenbosch University

Prof Naushad Emmambux
speaks on how innovation
can contribute to food and
nutrition security



PROJECT FINDINGS & HIGHLIGHTS



Cereals made from sorghum or mil-lets, and legumes such as cowpea or Bambara groundnut may con-tain anti-inflammatory, antioxidant and anti-hy-pertensive compounds that, if incorporat-ed into SMART foods, can reduce the risk of diet-related non-com-municable diseases.



Antioxidant enzymes, nitric oxide synthase and glycine betaine have been identified as playing key roles in building drought responses in maize.



The longer the seeds of dry beans – valued as a cheap source of protein – are kept in storage, the more they are susceptible to both fun-gal infection and infestation, research indicates.



High-throughput tillage systems can deplete soil of its microbial richness and diversity, important indicators of overall soil health.



Certain gene muta-tions that could reduce plants' uptake of cadmium – a heavy metal that, in food, is toxic to ani-mals and humans – have been identified, paving the way for the development of food crops that, with the aid of these mutations, would be more tolerant to heavy-metal stress.



This project is begin-nig to shed a light on how crops like maize, sor-ghum, soybean and cow-pea respond to drought at the physiological and molecular level.

Research on the envi-ronmental adaptation and heat tolerance of South African cattle continues, amid ongoing drought concerns in the country; heat stress has the potential to disrupt feed intake and mating, and drought stress decreases weight gain and growth.





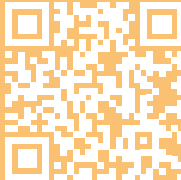
PROGRAMME 3: SAFETY

Food Safety Hazards

Principal Investigator: Prof Lise Korsten (UP)

As the outbreak of listeriosis in South Africa in 2017 – the largest such outbreak in the world – illustrated, food safety cannot be disregarded and taken for granted. This programme looks at the risks associated with the production, distribution and consumption of food in the South African food system, and how they should be managed.

*Prof Lise Korsten, co-director
of the CoE-FS explains how
food safety hazards affect
food security*



2017 PROJECTS



Building the Knowledge Platform



Food Safety Hazard Detection and Diagnosis

2018 PROJECTS



Building the Knowledge Platform



Food Safety Hazard Detection and Diagnosis



PROJECT FINDINGS & HIGHLIGHTS



The aim of this project was to build on existing knowledge on food safety, and disseminate this among both academics and the general public.



Over several workshops, students were either introduced to or worked through a range of test methodologies, based on methods accredited by AOAC International and the International Standards Organisation (ISO).



This project turned its attentions to food safety at particular points on the food chain: points of sale in the formal and informal sectors, South Africa's National School Nutrition Programme, and at home. Across various studies, researchers looked at fruits, leafy green vegetables, animal products, and red and white meat.



By 2018, the microbial database had grown to 20,125 isolates – foodborne pathogens isolated from plant and animal supply chains.



A study on fresh produce served to NSNP schools in Ekurhuleni and Pretoria West found that, at some schools, water used for irrigation were not of acceptable quality, with high levels of indicator organisms detected in the water.



Researchers conducted a country-wide profile on the levels of pesticides used among informal (and thus less regulated) food producers.



The expansion of formal-sector food retail into poor areas improves access to staple foods, generates public revenue and provides jobs, but can also push out informal sector livelihoods.



Food hygiene and food handling practice among street food handlers were found to be problematic in another study; so, for example, vendors would prepare coleslaw and raw meat with the same cutting boards and knives, while personal hygiene was also lacking. Researchers propose a massive education programme for these vendors.



Similar results were found in research on five kinds of fresh produce – spinach, cabbage, tomatoes, apples and carrots – collected in the Tshwane Metropolitan Municipality.



In studies on Morogo spinach sold by informal retailers, high levels of foodborne pathogens were detected in some of the 467 samples collected and processed.



Milk is prone to microbial contamination, especially among informal retailers who store milk in unsafe conditions, often not keeping it cool enough, researchers found.



The project also established a virtual microbial database, comprising all cultures that are collected through various related studies. A broad spectrum of over 400 microbes were isolated, identified and incorporated onto the database in 2017.



Researchers are still working through the findings of a study on food safety with households in the Ekurhuleni municipality.



PROGRAMME 4: PLATES

Shelves, Baskets & Plates

Principal Investigator: Prof Rina Swart, School of Public Health, UWC

This programme investigates the dietary intake of poor and vulnerable South Africans, and tracks the trends, drivers and trajectories behind these intake patterns. It also examines the differing contexts within which food is consumed in South Africa, and details the food environments that shape food preferences and choices.

Prof Rina Swart on examining food on the plates of consumers for nutrition and food security



2017 PROJECTS

Gender, Sex, Power & Food

Project leader: Prof Yanga Zembe, School of Government, UWC

Food and Nutrition Security of Highly Vulnerable Groups

Project leader: Prof Rina Swart, SOPH, UWC

Food Insecurity among Older People Living with HIV

Project leader: Dr Lucia Knight, SOPH, UWC

Prospective Urban & Rural Epidemiological Study

Project leader: Emeritus Prof Thandi Puoane, SOPH, UWC

Child Support Grant

Project leader: Dr Tanya Doherty & Dr Wanga Zembe, Medical Research Council

Food EPI

Project leader: Emeritus Prof David Sanders, SOPH, UWC

STOP-SA Neighbourhood Food Environment

Project leader: Prof Vicki Lambert, MRC/UCT Research Unit for Exercise Science & Sports Medicine (ESSM)

Enhancing Food Security Through Disaster Risk Reduction

Project leader: Prof Dewald van Niekerk, African Centre for Disaster Studies, NWU

PROJECT SUMMARIES & HIGHLIGHTS



This study surveys the long overlooked gendered nature of food insecurity, specifically in KwaZulu-Natal and the Western Cape; and looks at the role of women as caregivers and sexual beings in relation to food, and the food strategies – shaped by gender politics – that they adopt.



Early findings support the suggestion that there is indeed a complex interplay between adherence to antiretroviral treatment (ART) and food security, and that ART could result in greater hunger, especially among the elderly, and that hunger intensifies the side-effects of ART.



This study aims to shed a light on the provocative question on how poor and vulnerable South Africans secure the food they want. This study includes an analysis of the structural and contextual limitations the poor and vulnerable face.



The consumption of unhealthy food is the result of personal choices, cultural and religious practices, and the limited access to healthy alternatives, found this study on the factors that influence the food choices among residents in rural sites in Cape Town and the Eastern Cape.



This study was designed to monitor and benchmark the impact of public sector policies and actions on food environments in South Africa, and measure it against achievable, well-defined standards of good practice.



A study of 12 food security policies and two disaster risk-reduction policies found that half of the former make no mention of disaster risk reduction, while neither of the disaster risk reduction policies make



While clinics generally advise exclusive breastfeeding for the first six months of an infant's life, mothers often worried that this was insufficient and would introduce formula and sugar solids into children's diets early on.



People shopping in high SES stores were more likely to purchase fruit, vegetables, dairy, snacks and sweets; while those shopping in low SES areas were more likely to consider healthy food expensive.



reference to food security, suggesting that these areas of concern are not well integrated in the South African policy environment.



Price is the priority for persons shopping in low-income stores, while convenience is the number one priority for persons shopping in high socio-economic status (SES) stores.

2018 PROJECTS

Food Consumption Patterns

 Project leader: Prof Rina Swart, SOPH, UWC

Gender in Household Food (In)Security

 Project leader: Prof Yanga Zembe, UWC

Post-School Food Insecurity

 Project leader: Prof Rina Swart & Prof Catherine Scheck, SOPH, UWC


Child Support Grant

 Project leader: Dr Wanga Zembe, MRC

Plates Colloquium

 Project leader: Prof Rina Swart, UWC

Gender, Sex, Power & Food

 Project leader: Dr Yanga Zembe, UWC


Food Insecurity among Older People Living with HIV


 Project leader: Prof Lucia Knight, UWC; with Prof Enid Schatz, University of Missouri; and Dr Ferdinand Mukumbang, UWC


Enhancing Food Security through Disaster Risk Reduction


 Project leader: Prof Dewald van Niekerk, NWU


PROJECT FINDINGS & HIGHLIGHTS


 Conducted among student populations at the University of the Western Cape and the University of Limpopo (UL), this research found that, at UWC, over 45% of students have to live on less than R1,000 per month. Some 19.2% reported modest hunger, while 6.5% reported severe hunger.


 This study surveys the long overlooked gendered nature of food insecurity, specifically in KwaZulu-Natal and the Western Cape; and looks at the role of women as caregivers and sexual beings in relation to food, and the food strategies – shaped by gender politics – that they adopt.


 Older people living with HIV are especially concerned about how their access to food influences their ability to take their medication, and about the side-effects of their medication, be it ART and medication for co-morbid conditions.

 In this study – to conclude only in 2019 – researchers will work with the Farmworker project of the SARCHI chair in Social Protection for Food Security to understand women’s experiences of the challenges they face to contribute to the food security of their households and communities.

 This study will look into the food and nutrition security of young adults aged 18-25 living in Langa in the Western Cape and Ikageng in the North-West Province, their food intake, as well as how they acquire food and how they engage with their food environments.

 While clinics generally advise exclusive breastfeeding for the first six months of an infant’s life, mothers often worried that this was insufficient and would introduce formula and sugar solids into children’s diets early on.

 The CoE-FS provided a small grant to support postgraduate students attending a colloquium at the National Nutrition Congress at UWC in September 2018; the students represented 11 higher education institutions and included 15 master’s students and six PhD students, with 14 coming from designated groups.

 While South Africa continues to promote climate-smart agriculture (CSA), little thought is being given to the constraints faced by women smallholder farmers, with the result that CSA adoption is being skewed in favour of better-resourced men farmers.



PROGRAMME 5: CHILDREN

Persistence of Child Malnutrition

Principal Investigator: Prof Julian May, UWC

While self-reported hunger of children has reduced in South Africa, stunting has remained high for a middle-income country, and largely unchanged since 1993. At the same time, inroads into micronutrient deficiencies has improved but not reached the levels to be expected from a country with South Africa's wealth and the country's fortification and supplementation programmes. In addition, overweight and obesity has emerged as a concern among children of primary-school-age. This programme seeks to identify trends, determinants and consequences of food insecurity for mothers and children in South Africa, and explores possible policy and other solutions.

2017 PROJECTS



Secondary Analysis of Maternal and Child Malnutrition



Hypothesis Forming Case Studies on Child Diets



Laboratory Studies on Child Feeding

2018 PROJECTS



Secondary Analysis of Maternal and Child Malnutrition



Child Malnutrition Case Studies



Child Feeding Laboratory Research

PROJECT FINDINGS & HIGHLIGHTS



Childhood malnutrition is a significant problem in itself, but efforts to address the challenge is hampered when the supposedly associated data sets meant to describe its nature and scale differ significantly; this six-part study set out to improve the measurement and analysis of childhood malnutrition by pooling data and employing innovative new ways to make sense of and better utilise existing data.



Having to return to work is one of the main reasons mothers listed for why they had to discontinue breastfeeding, according to doctoral research conducted in Delft in the Western Cape.



Even hygiene is gendered, according to a study that found that shared sanitation, the handling of refuse and the treatment of water have a greater impact on women.



Some indigenous complementary porridges – made from maize, sorghum, cassava and cowpea, among other vegetables – don't score well when it comes to sensory appeal, particularly with regards to its sliminess and stickiness.



Environmental enteric dysfunction (EED) – intestinal inflammation caused by chronic exposure to pathogens – may explain why, despite significant investments in child health programmes, child-stunting rates in South Africa had over 1993 and 2015 dropped only marginally from 30% to 27%.



Unable to afford more expensive commercial baby foods, caregivers often turn to bulky porridges that they then dilute with large amounts of water, resulting in a substantial bowl of cereal, but low in energy and nutrients.



Despite several schools in the Cape Town metro running functional school food gardens, it remains unclear whether these gardens have a direct and positive impact on the food security of learners at the schools.



Children living in the poorest 20% of South African households are five times more likely to be stunted compared to children living in the richest 20% of households; what's more, the lowest-income households dedicate 31% of their expenditure to food and non-alcoholic beverages, compared to 6% for households in the top (richest) decile.



Over 2017 and 2018, several studies were being conducted on breastfeeding experiences and practices in provinces around South Africa; early results suggest that many mothers introduce food and liquids too early into infants' diets, and that those diets often lack diversity and make little use of animal source foods.



The mother's height, employment status and education have a marked influence on determining whether a child will be stunted, pointing to an inter-generational 'transfer' of malnutrition, and highlighting the need to invest in the nutrition of girls, from birth through to reproductive age.



A 1% increase in food prices as the result of weather-related shock – like prolonged droughts – decreases the number of food items consumed by the average household by around 2.5%, with poor households particularly hard hit.



Against the backdrop of increasing levels of obesity among children, a study in Khayelitsha and Mitchells Plain in the Western Cape has identified the many variables that determine household food choices, including the households' income and the cost of food, accessibility and availability, cultural influences, palatability/taste, familiarity (especially for vegetables), education/knowledge, social setting, time constraints, religion and food choices, and the distance travelled to purchase food.



In general, children have a positive attitude towards their school food gardens, and many think of it as an opportunity to learn new skills that they can employ in their gardens at home.



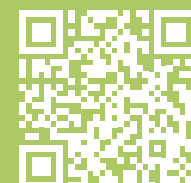
PROGRAMME 6: POLICY

Food Governance & Policy Reform

Principal Investigators: Prof Lorenzo Fioramonti (Director of GovInn, UP (2017)) and Prof Bruno Losch, GovnInn (based at UWC)

Public debate and national policy decisions need to be informed by independent analysis and up-to-date information. In turn, academic research needs to be informed by the needs of policy makers and other users of this knowledge if it is to be relevant. The POLICY programme is designed to encourage and facilitate dialogue between researchers, the community, and policy makers so as to inform policy making and shape research.

*Prof Bruno Losch speaks on
food governance and policy
reform for food security*



2017 PROJECTS



Case Studies in Governance



Knowledge Brokerage Platform for Food Security Governance

2018 PROJECTS

Towards National-Level Knowledge Brokerage



Project leaders: Prof Lise Korsten, Department of Microbiology and Plant Pathology, UP; Prof Hettie Schönfeldt, African Research Universities Alliance (ARUA) Centre of Excellence for Food Security; & Prof Jaap de Visser, Dullah Omar Institute, UWC

Local Food Governance



Project leaders: Prof Bruno Losch, Dr Camilla Adelle, & Dr Robin Bourgeois, GovInn, UP; & Mr Florian Kroll, PLAAS, UWC

The Right to Food for School Leavers



Project leader: Prof Ebenezer Durojaye, Community Law Centre, UWC

PROJECT FINDINGS & HIGHLIGHTS



In a future scenarios exercise in Witzenberg in the Cape Winelands, researchers have sought to imagine how local development would play out in the future, and how it would link to the evolution of the food system.



This project is focused on the rights to food of school leavers, and asks – among other questions – where the obligation lies to realise the right of school leavers in South Africa.



A study on local food governance uses complex participative tools to try and identify the complex web of actors and relationships that shape local food systems in and around the Cape Town metropolis.



Over several meetings and workshops in 2017, policy officials, researchers and other key stakeholders concentrated its efforts on local food governance, with the particular goal to inform 'food-sensitive planning' as one of the six pillars of the Western Cape Government Household Food and Nutrition Security Strategic Framework, which in turn aims to address household food and nutrition insecurity in the province.



A number of studies have been started to unpack the overlap nature of food governance in South Africa, particularly on the role that local government can play to promote food security in communities.



The Western Cape Food Governance Community of Practice, based at UWC, has proven an invaluable and active forum for academics to engage with key stakeholders from government, civil society, and the formal and informal sectors on issues of food governance. A Gauteng of Community of Practice was also established in 2018.



There is a great deal of uncertainty on where the powers and mandates of the different levels of government start and end; so research in this project looks at, among other things, how regulation and policy designed for the formal sector impacts – if at all – the informal sector at the provincial and municipal levels.



Over 2018, several papers were published tackling the issues on food governance.



One highlight of this project was a two-day national colloquium, hosted in Cape Town in August 2018.



At the 2018 Food Safety Conference, researchers hosted a governance symposium targeting, very specifically, parliamentarians.



Studies have revealed that hunger at tertiary institutions in South Africa is rampant, especially among historically disadvantaged students.



PROGRAMME 7: SYMBOLS

The Symbolic Construction of Food Consumption in the Context of Food Insecurity

Principal Investigators: Prof Ernst Conradie,
Department of Religion and Theology, UWC

Food is situated within a social construction of reality where cultural and religious symbols inevitably impact – by constructing and distorting meanings – on the ways in which food is selected, prepared and consumed. Food is not merely consumed for the sake of survival, but also constructs and conveys symbolic meaning. This programme explores the social construction of food in the context of deprivation and food insecurity.

2017 PROJECTS



The Role of Faith-Based Organisations in Food Security



Social, Religious & Cultural Meanings & the Value Attached to Food



Food as a Symbol in Creative Writing & Performance



Support to the Desmond Tutu Chair

**** Programme did not continue in 2018.**

PROJECT SUMMARIES & HIGHLIGHTS



Twelve postgraduate students in the Creative Writing programme – focussing on food as a broad theme – published an anthology of poetry, fiction and non-fiction titled 'Cutting Carrots the Wrong Way'; 400 hundred copies were published and launched at the Food Politics and Cultures festival at the District Six Museum in November.



One study looked at the perceptions of faith-based organisations (FBOs) on the underlying causes of food insecurity in the Cape Metropole, taking into account economic (structural), cultural, moral and spiritual dimensions.



A master's study on temperance and perceptions in Muslim households explored why people may act in ways that undermine their own health and food security.



In a collaboration with the annual McGregor Poetry Festival, the project supported 14 up-and-coming young black poets, the Athol Williams Poetry Bus transporting them from Cape Town to the festival.



Doctoral students started their research on several topics, including survival sex in the context of food insecurity; the shaping of socio-cultural discourses on black women's bodies; and feminist narratives of seed within the context of indentured migrant communities in South Africa.



Researchers have explored the cultural and religious significance of indigenous vegetables found in rural Zimbabwe.



FBOs are deeply involved in food relief, if not always in food security or food sovereignty.



The project explored food security at the intersection of religion and culture, interrogating feminist understandings of food security and gendered agency as expressed through cultural practices and religious beliefs.





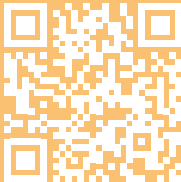
PROGRAMME 8: POLITICS

Food Politics & Culture

Principal Investigators: Prof Desiree Lewis, Department of Women's and Gender Studies, UWC

This Programme explores human relationships to food, the power dynamics of food production and access, and the meanings that food acquires in cultural and social contexts, and the workings of the current food regime. A central preoccupation in South African humanities work focuses on how food is marketed and imagined in relation to social identities and lifestyle.

Prof Desiree Lewis unpacks food politics and cultures - humanities approach to food research



2017 PROJECTS

Dominant Forms of Knowledge



Project leader: Prof Desiree Lewis, UWC

Another One's Bread: A theatre production)

Gender and Food



Project leader: Prof Tammy Shefer, Department of Women's and Gender Studies, UWC

2018 PROJECTS



Food Contestation (4)

PROJECT SUMMARIES & HIGHLIGHTS



A key public event in 2017, the three-day Food Politics and Cultures Festival that focused on food and eating in South African social life, drew participants and an audience of academics, artists and civil society, and featured a drama performance, an arts exhibition as well as several other events.



Academics and students on the project spoke at several marquee events over 2017, and also published a number of papers related to the issue of food and its meanings within South African society.



The Project's website ([https:// foodpoliticsandculturesproject.com](https://foodpoliticsandculturesproject.com)) has served as an ongoing virtual form of public engagement as well as knowledge sharing and dissemination.



Taking it title (Another One's Bread) from the Afrikaans expression "een man se dood is 'n ander man se brood" (one person's death is another person's bread), this play was produced and staged under the auspices of award-winning black playwright Mr Mike van Graan, and was directed by television actress Pamela Nomvete. The play was performed at numerous venues – including the District Six Museum and the Shack Theatre in Khayelitsha – and touched on issues of food security as it intersects with apartheid's spatial geographies, poverty and gender roles, among other concerns.



Taking the form of a PhD bursary for Trudy Wagenstrom, this overall study focuses on gaining in-depth and rich insight into contemporary discourses and practices related to living with HIV in poor communities in South Africa. A key component will address issues of food and eating, and how food security shapes the experiences of living with HIV.



Performances also raised R25,000 towards an initiative at Wits University that provides meals for food-insecure students and other members of the Wits community.



Several thesis projects were ongoing in 2018. Themes included the preservation of indigenous knowledge on the preparation of indigenous vegetables, food and the Old Testament, food activism in Cape Town, and the significance of things – including food – in poetry.



The Market Theatre and DST-NRF Centre of Excellence in Food Security,
in association with MVG Productions Presents
ANOTHER ONE'S BREAD
A dark comedy about food, funerals and feeding schemes

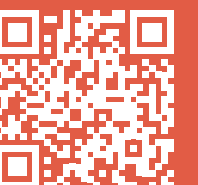


PROGRAMME 9: SARChI UK Bilateral Research Chair in Social Protection for Food Security in South Africa

Principal Investigator: Prof Stephen Devereux, UK
Institute for Development Studies, University of
Sussex

This research programme
aims to critically interrogate
why South Africa's
comprehensive social
protection system is not
making a much more
significant contribution
to the eradication of food
insecurity and hunger,
and to identify how this
contribution can be
enhanced

*Prof Stephen Devereux
speaks on social protec-
tion for food security*



2017 PROJECTS

An initial literature review identified what's been dubbed South Africa's 'food security paradox': national food availability exceeds needs; self-reported hunger has fallen for the past 20 years; social grants have expanded to reach two-thirds of all children and are the main contributor to incomes in poor households; yet about one in four children are stunted, and this figure has not fallen since the early 1990s.

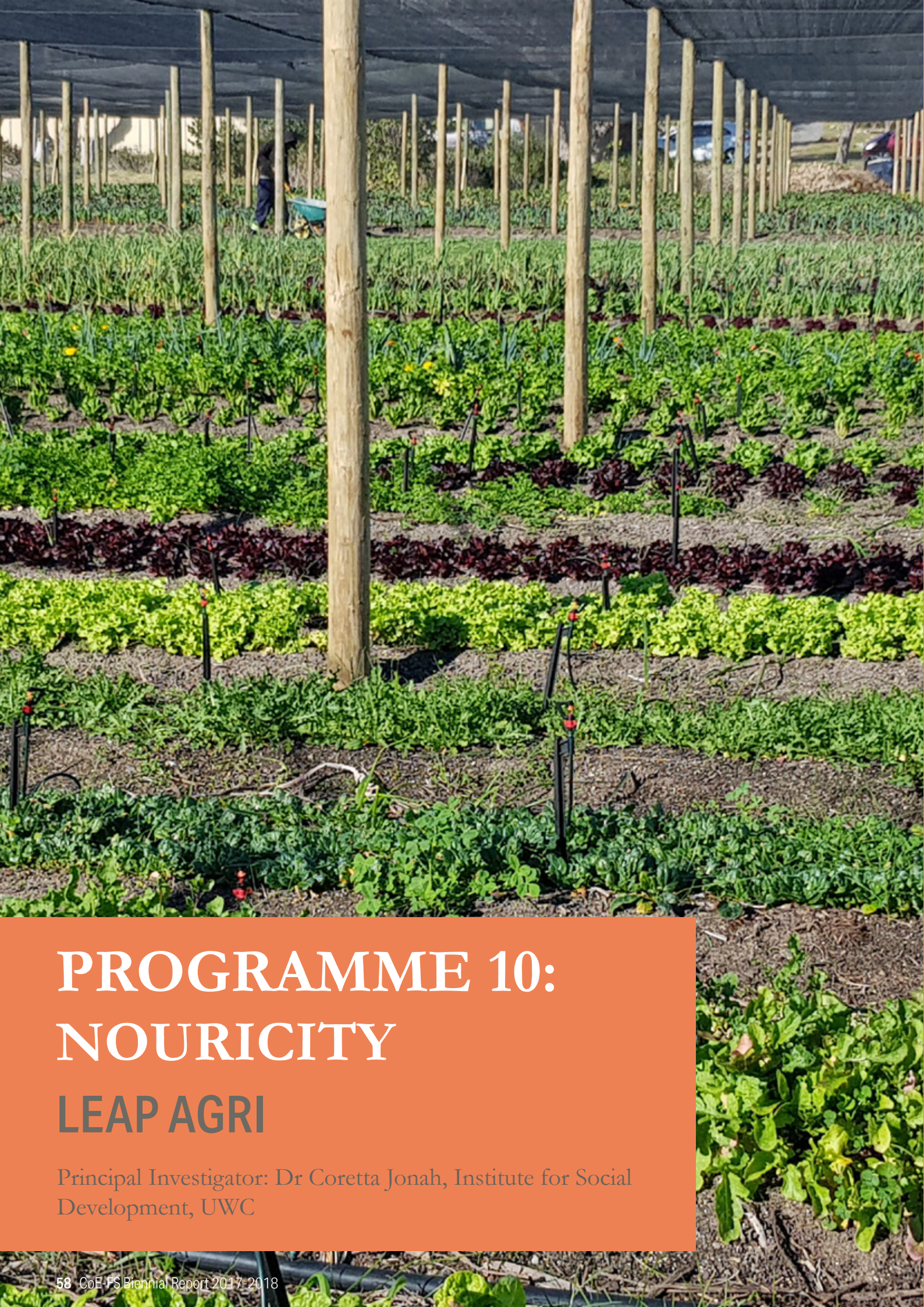
Research for this project has been structured around seven themes:

- three programme areas (social grants, school feeding, public works),
- two case study groups (farm workers, informal workers), and
- two cross-cutting topics (rights to food and social protection, shame)

2018 PROJECTS

- The primary focus in 2018 was a study on food insecurity among farm workers.
- A secondary focus was on extending social protection to informal workers.
- The Farm Worker study built on an earlier research commissioned by the NGO Women on Farms Project on working conditions of women farm workers in the Western Cape and Northern Cape.
- Research methods included a quantitative panel survey of 400 farm worker households who were interviewed in 2017 and again one year later; and monthly monitoring for one year of food security status, using the Household Food Insecurity Access Scale, Dietary Diversity Index, and Coping Strategies Index as indicators.





PROGRAMME 10: NOURICITY LEAP AGRI

Principal Investigator: Dr Coretta Jonah, Institute for Social Development, UWC

Starting in 2018, this project was organised under the long-term EU-Africa Research and Innovation Partnership on Food and Nutrition Security and Sustainable Agriculture. The project aims to capitalise on the prior and existing collaborations on food and nutrition security projects between the participating institutions. These are:

- The Institute of Statistical, Social and Economic Research (ISSER), University of Ghana,
- Centre of Excellence in Food Security, (CoE-FS)
- Uganda National Academy of Sciences (UNAS)
- Centre for Development Research (ZEF), University of Bonn, Germany
- Wageningen Economic Research (WEcR), Wageningen University, The Netherlands.
- In addition, the project brought on a new partner, the Base of the Pyramid (BoP), a company with extensive experience in the field of food and health in informal settlements in Ghana and Uganda

2018 PROJECTS

2018 was in large part committed to setting up and inaugurating the various studies. The NRF funded the local component project.

The research had three prongs, investigating:

1. Urban food sources, characteristics and rural-urban linkages, which as “systemic” drivers determine household food choices and nutrition;
2. People’s access to nutrition-related knowledge (formal and informal, indigenous and Western), income, food tastes, habits and culture, as “individual” drivers of food choices; and
3. How systemic and individual drivers combine to determine people’s food consumption and nutrition status.

A study led by Dr Jane Battersby-Lennard of the African Centre for Cities (ACC) at UCT with PhD student Alison Pulker, will seek to map the urban food system in Cape Town, building on existing research within the ACC and the CoE-FS.

Framed within the context of the 2018 listeria outbreak in South Africa, a project – led by Prof Lise Korsten at UP – will look the safety of food consumed and produced within urban areas; one aim of the study is to look into ways to trace the sources for African street food, linking to studies on the prevalence of pathogens in street food.

Eating habits are changing with increased urbanisation; Dr Coretta Jonah is working with UCT doctoral student Ms Winnie Sambu and Prof Julian May to assess dietary transitions into obesity among urban residents in both South Africa and Ghana. (3)

Prof Yanga Zembe (UWC) and Dr Wanga Zembe (MRC), will lead a study in the Langa township in the Western Cape on how the poor engage with and interpret information and public health guidelines on nutrition and health; one aim of the study is to understand how people interpret indigenous and Western knowledge of nutrition.





SPECIAL PROJECTS

Along with projects and activities initiated or led by researchers affiliated to the CoE-FS, the Centre of Excellence also sponsored a number of smaller projects and events that were aligned to its specific and broader goals, and are funded using unallocated or returned funds.

2017 PROJECTS



SAAFoST 2017 Congress



International Food Fair



Global Food Security Conference (GFS)



Publication Grant



PROJECT SUMMARIES & HIGHLIGHTS



In 2017, the South African Association for Food Science & Technology (SAAFoST) hosted its 22nd Biennial International Congress and Exhibition in September 2017. The theme of the congress, 'A Hunger for Change: Innovations, solutions and emerging technologies' served as a framework within which to explore solutions to the many challenges that food professionals face in the mission to provide a sustainable supply of safe, satisfying and healthy food.



Hosted at UWC in September 2016, the Food Fair was structured in an exhibition format, where staff and students had an opportunity to showcase foods as well as cultural performances from their respective countries. The aim of the event was to encourage cultural exchange between students and staff from UWC's ISD, SOG and CoE students and staff, while simultaneously sharing in the diverse cuisine from their countries of origin.



The GFS conference brought together 674 students, academics, civil society representatives, members of government and subject matter experts from 61 countries to share ideas, discuss shared challenges and identify possible solutions to global challenges. The programme featured 22 keynote speakers, as well as 155 oral and 275 poster presentations.



A small publication grant was allocated to assist Mr Cyriaque Hazikamana, a researcher at PLAAS, to revise and resubmit a publication submitted to a high impact international journal co-authored with Professor Julian May, on the impact of the avocado industry on the quality of life and livelihoods of poor households in the Giheta district of Burundi.

2018 PROJECTS



Food Security Conference



Africa Day



Postgraduate Resource Centre, School of Government



STATA Lab Assistants)



Neighbourhood Farms Project)



A Feast from Nature



Organic Food Systems



McGregor Community Project



Agriculture Transformation in Africa (ATA)

PROJECT SUMMARIES & HIGHLIGHTS



A team within the Department of Computer Science at UWC, led by Prof Bill Tucker, developed an ICT system that allows for effective management and data collection of Neighbourhood Farm activities; this included the design of a stick management system; a prototype for stock requisition between different farms, as well as for order placement and processing; and a system for partial communication between Neighbourhood Farm participants.



The 2nd International Scientific Conference for Food Security and Food Safety, hosted by UP, was held in Pretoria in September 2018. The conference's main theme – 'Next Generation Food Safety Technologies to Address the Sustainable Development Goals' – aimed to assist researchers to collectively strengthen food safety research locally, within the continent as well as globally.



This project built on the International Food Fair hosted by UWC's ISD and SoG, culminating in a University-wide celebration as part of the institution's 2018 Africa Day commemorations, drawing more faculties, units, and schools.



A small grant was awarded to the ISD to financially assist two STATA lab assistants for the period of March-April 2018; the students assisted researchers and postgraduate students, including CoE-FS students, with data analysis.



A small grant was provided to the SoG at UWC to assist with the management of the CoE-FS research space that is available for postgraduate students from the Centre of Excellence, as well as from the ISD and SoG.



Professor Raymond Auerbach (NMU) released a book titled 'Organic Food Systems: Meeting the needs of Southern Africa', which among other things included chapters on the role of urban and peri-urban food production in Africa, and a plan for the South African organic sector; despite the many benefits of organic farming, it remains underdeveloped in the country.



Prof Kobus Moolman, director of UWC's Creative Writing Programme, and eight postgraduate students participated in the 2018 McGregor Poetry Festival, presenting poems and in so doing introducing new young – mainly black and coloured – voices to the event.



This project sought to unlock valuable knowledge about indigenous food and food culture among the public, media, and researchers; and included several relaunches of the book, 'A Feast from Nature – Food Culture of the First Humans on Planet Earth', by nutritionist and food scientist Dr Renata Coetzee.



Neighbourhood Farms aims to address food insecurity, food nutrition and socio-economic development in a holistic manner, and looks to use schools as agents for change in the broader community. The project is in the process of installing 11 Neighbourhood Farms at schools in the South Peninsula of Cape Town, each farm comprising productive market gardens, outdoor classrooms and regenerative permaculture gardens.



Led by Prof Frans Swanepoel (UP) and funded by Cornell University in the US, the project seeks to support Africa to become a global player in food systems and agribusiness by 2025. The project includes the design of programmes and events, and piloting some activities.

Looking Ahead



Every year, the Centre brings together its management committee to conduct an honest and multi-level review of its performance. In 2018, a Review Panel also ran a stringent Mid-Term assessment of the CoE-FS.

We remain optimistic about the work that the Centre has conducted, and in the way it has performed. In the mid-term review, we agreed that the CoE-FS has laid the foundation for a coherent research paradigm for food security issues in South Africa. And that UWC and UP, despite the operational and cultural differences between the two institutions, complement each other well in terms of their respective research competencies and interests. There are ongoing discussions on facilitating the collaboration between the two institutions, and a high-level

meeting between the host universities and the NRF was scheduled for the first quarter of 2019 to discuss issues that still need addressing. One issue that was of especially concern was the 'privilege gap' experienced by researchers at South Africa's historically disadvantaged institutions.

Nonetheless, we are confident that the joint management model for a national research centre is both viable and productive. The Review Panel did raise concerns about the funding model adopted by the CoE-FS – which is in keeping with that of the NRF and other national centres of excellence – and discussions will continue on this topic.

We have concluded that some programmes are doing well in terms of research and addressing the food security issues in the country. The CoE-FS has also made progress in laying the

foundation for transdisciplinary projects across institutions. We have evidence that the CoE-FS is doing well in training citizens from the rest of Africa. What's more, by design and chance, women are well represented among the researchers and students that the Centre is supporting.

The Review Panel expressed some concerns over the range and spread of the Centre's projects, echoing sentiments raised by the steering committee way back in 2014. In response, we have committed to reduce the number of research programmes to three.

These are:

- Innovation for sustainability, productivity and utilisation of indigenous African and other locally available foods that impact on food security;
- Multi-level governance and policy dialogue for a sound and resilient food system at the global, national and local level; and
- Quantity, quality and diversity of diets in relation to all forms of malnutrition.

In addition, we intend having three cross-cutting themes in these programmes. We will incorporate a humanities perspective to explore the complex, changing and myriad relationships between food and human beings. We will adopt a food system safety perspective addressing hazards in the production, processing, distribution and consumption of food. We will also weave into our research a social protection and poverty reduction perspective concerned with the causes and consequences of, and solutions, to multiple deprivations.

These programmes and themes will be phased per the recommendations of our 2019 Business Plan, and will be more fully developed during our extended Lekgotla in May 2019 and our student conference in October 2019.

We believe that our existing approach of selecting topics within each of these programmes that are then addressed by students and supervisors as Work Packages, remains the approach most suited to retain a coherent research focus within a transformative agenda.

There has been some debate within the CoE-FS – and flagged as a concern by the Review Panel – as to the interpretation of the concept of 'excellence' by the CoE-FS. We appreciate, for example, that trans-disciplinary journals do not necessarily have high-impact factors; that achieving societal impact takes time away from research; and that financially needy students often require additional support. However, we stand firm in our belief that 'excellence' in food security must include societal impact and relevance.

In moving forward, we will continue to acknowledge these debates, and we intend to critically engage with the concept of excellence within our Lekgotla and supervision, as well as in the academic and popular press.

We remain confident that the CoE-FS has much to contribute to academia in the country and on the continent, but more specifically to addressing food security in South Africa. We are only beginning to scratch the surface of what CoE-FS can achieve, and believe that it should continue to receive funding from the NRF.

FINANCIAL INFORMATION: 2017 & 2018

NRF FUNDING

2017	2018
Commitment: R17 672 320.23	Commitment: R17 672 320.23
Expenditure: R16 706 721.13	Expenditure: R16 706 721.13

SPENDING ON BURSARIES

2017	2018
34.8% of 2017 expenditure: R5 810 000.00	31.5% of 2018 expenditure: R4,895,000.00

OTHER FUNDING* (from sources other than NRF)

2017	2018
R13,057,884.68	R13,330,317.00

Andrew Mellon Grant (UWC student support): R2,740,000.00

Cornell University (UWC grant): R200,000.00

Sources include:

Bloomberg (UCT Obesity Prevention Project**): R5,105,050.00

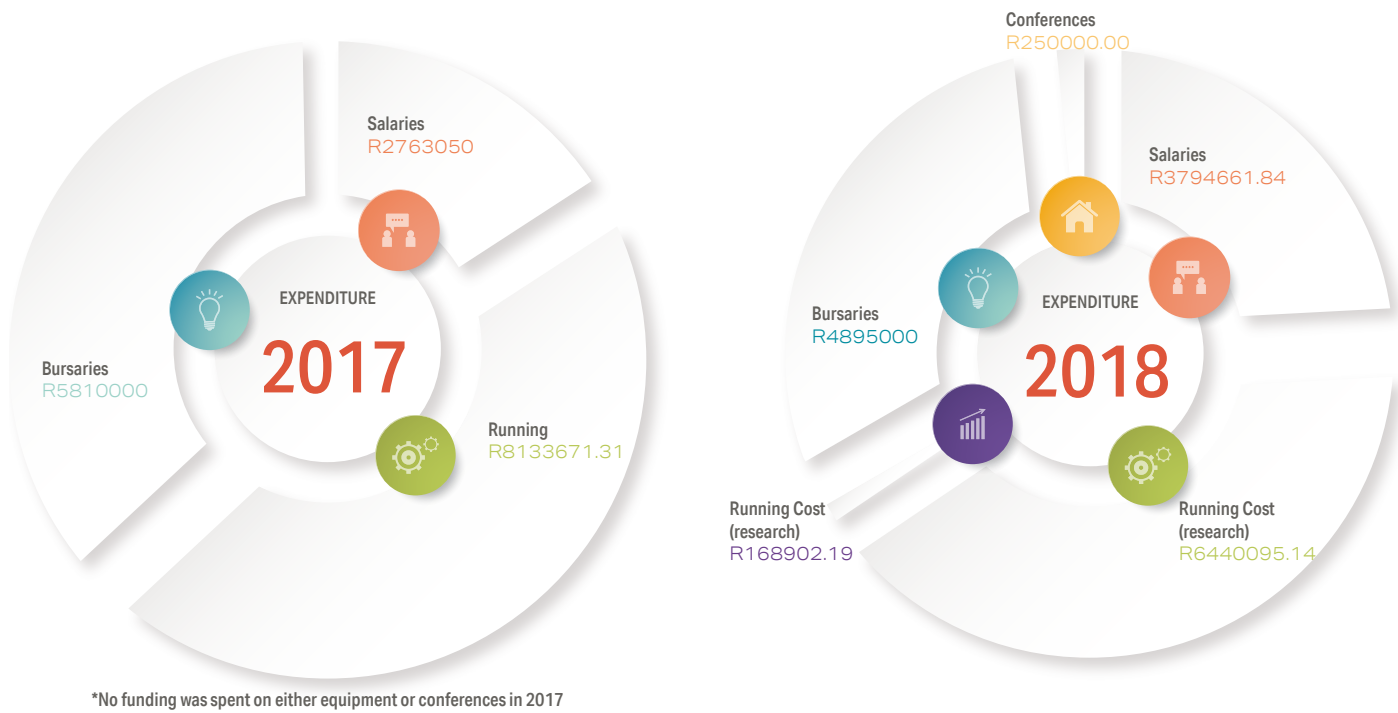
SARChI grant: R1,210,000.00

Andrew Mellon Grant (UWC student support): R980,000.00

IDRC (UWC ROFE project**): R2,612,786.00

**Both projects are led by Prof Rina Swart of the School of Public Health, UWC

EXPENDITURE



LEVERAGE FUNDING

2017	2018
R3,100,500.00	R9,956,134.00

Leverage funding refers to grants and in-kind incomes that were raised by researchers associated with the CoE-FS for other purposes but used for activities of direct benefit to the Centre.

RETURN ON RESEARCH INVESTMENT

The CoE-FS publication list and students registered for 2017 and 2018 represents a significant return on investments, and once the published output has been verified and converted into subsidy income, this will represent a considerable income for the universities at which research is taking place.

It is difficult to accurately estimate the value of the expenditure in terms of subsidy income

since this varies by year and is affected by the number and location of co-authors.

However, the greatest return on investment is the networking and collaborations that have taken place within the projects supported by the Centre and the findings that are emerging. These findings represent new directions in the natural and social sciences as well as a unique engagement with the

humanities through the Mellon Foundation initiative and the SARChI programme. The direct links to policy that are being made through our engagement strategy and knowledge brokerage increase the odds of the CoE-FS's greatest contribution: reducing childhood malnutrition, increasing disability adjusted life years and increasing the sustainability of the food system.



DSI-NRF Centre of Excellence in Food Security

Stay connected

➤ www.foodsecurity.ac.za



science & innovation

Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA



National
Research
Foundation



UNIVERSITY of the
WESTERN CAPE



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA