Self-Assessment Report of DST-NRF Centre in Indigenous Knowledge Systems (CIKS) for Centre’s of Excellence Review 2018

Review report written by:
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Dr. Mayashree Chinsamy, CIKS Research Manager

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<tr>
<td>DST</td>
<td>Department of Science and Technology</td>
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<tr>
<td>CoE</td>
<td>Centre(s) of Excellence</td>
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<tr>
<td>NRF</td>
<td>National Research Foundation</td>
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<td>NSI</td>
<td>National System of Innovation</td>
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<td>NDP</td>
<td>National Development Plan</td>
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<td>IKS</td>
<td>Indigenous Knowledge Systems</td>
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<tr>
<td>UKZN</td>
<td>University of KwaZulu-Natal</td>
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<td>UL</td>
<td>University of Limpopo</td>
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<td>NWU</td>
<td>North West University</td>
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<tr>
<td>UNIVEN</td>
<td>University of Venda</td>
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<tr>
<td>UNISA</td>
<td>University of South Africa</td>
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<tr>
<td>IK</td>
<td>Indigenous Knowledge</td>
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<td>CIKS</td>
<td>Centre in Indigenous Knowledge Systems</td>
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<td>ATHPs</td>
<td>African Traditional Health Practitioners</td>
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<tr>
<td>FiBL</td>
<td>Institute of Organic Agriculture</td>
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<tr>
<td>BIGSAS</td>
<td>Bayreuth International Graduate School of African Studies</td>
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<tr>
<td>PHARMBIOTRAC</td>
<td>Pharm-Biotechnology and Traditional Medicine Center</td>
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<tr>
<td>MUST</td>
<td>Mbarara University of Science and Technology</td>
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<tr>
<td>IDPs</td>
<td>Integrated Development Plans</td>
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<tr>
<td>ATM</td>
<td>African Traditional Medicine</td>
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<td>ACPC</td>
<td>African Climate Policy Center</td>
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<td>UNECA</td>
<td>United Nations Economic Commission for Africa</td>
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<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>DIRCO</td>
<td>Department of International Relations and Co-operation</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>WMO</td>
<td>World Meteorological Organisation</td>
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<tr>
<td>IMTR</td>
<td>Institute for Meteorological Training and Research</td>
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<tr>
<td>CIS</td>
<td>Climate Information Service</td>
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<td>MILE</td>
<td>eThekwini Municipal Institute of Learning</td>
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<td>SANBio</td>
<td>Southern Africa Network for Biosciences</td>
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<td>IRD</td>
<td>Institute for Rural Development</td>
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<td>AMRI</td>
<td>Archie Mafeje Research Institute</td>
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<td>IARS</td>
<td>Institute for African Renaissance Studies</td>
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<td>AALS</td>
<td>Academy of African Languages and Science</td>
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<tr>
<td>ACCORD</td>
<td>African Centre for the Constructive Resolution of Disputes</td>
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<tr>
<td>NIHSS</td>
<td>National Institute for the Humanities and Social Sciences</td>
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<tr>
<td>BRICS</td>
<td>Brazil, Russia, India, China and South Africa</td>
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<td>SABTT</td>
<td>South African BRICS Think Tank</td>
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<td>MoU</td>
<td>Memorandum of Understanding</td>
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<td>CRL</td>
<td>Commission for the Promotion and Protection of the Rights of Cultural, Religious and Linguistic Communities</td>
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<td>CSIR</td>
<td>Council for Scientific and Industrial Research</td>
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<td>SAWB</td>
<td>South African Weather Bureau</td>
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<td>DoA</td>
<td>Department of Agriculture</td>
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<tr>
<td>UN</td>
<td>United Nations</td>
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<td>WHO</td>
<td>World Health Organisation</td>
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<td>GHG</td>
<td>Greenhouse gases</td>
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EXECUTIVE SUMMARY

Why the CIKS was established?
In spite of the fact that a large proportion of African people still depend on their Indigenous Knowledge Systems (IKS) for livelihood, colonialism, apartheid and other forms of imperialism, marginalized IKS as a knowledge system on its own merit. The CIKS has therefore been mandated to promote, protect and preserve IKS as a new area of enquiry in the knowledge domain. In this context, the CIKS has the following responsibilities:

- **An Instrument of Implementing the National IKS Policy (2004)**
  Promoting IKS in higher education as a key component of human capital development and social transformation in South Africa

- **Promoting Role of IKS in National Development Plan (NDP)**
  Mobilising community-based knowledge systems to mitigate the triple challenges of poverty, inequality and unemployment as articulated in the NDP

- **Inclusion of IK Holders and Practitioners as Knowledge Producers**
  Their recognition as knowledge producers on their own merit. Making knowledge production, innovation, human capital development more relevant; breaking barriers between academia, industry, business, government and local communities

- **IKS and Global Knowledge Economy**
  Enable South Africa and Africa as a whole to enter the global knowledge economy on its own terms rather than those dictated by others

**IMPACT**

**A Paradigm Shift**
Advancing democracy of knowledge systems and mitigation against western knowledge dominance in global knowledge economy. There is no universal reality, knowledge system or science. Recognition of multiplicity of knowledge systems which are culturally, place-based and complementary. Building an active citizenry through mobilization of community-based knowledge systems
Although currently, the CIKS falls under the NRF Directorate of Research Chairs and Centres of Excellence (RCCE), unlike most of the established CoE in South Africa, its establishment as a CoE has taken a developmental route. It was initially managed under the Knowledge Fields Development (KFD) Directorate of the NRF. Like other CoEs the key performance areas of CIKS in the promotion of IKS development for transformative sustainability are Research, Education and training, Information brokerage, Networking and Service rendering.

The following processes characterized the process of the CIKS establishment:

1. **Identification of CIKS Partner Institutions**
   The task of developing the Centre was originally put under historically disadvantaged institutions; i.e.: North West University (NWU, Mafikeng Campus), University of Limpopo (UL) and University of Venda (UNIVEN). The NWU has been a champion in IKS curriculum development since 2001; the UL and UNIVEN have a rich bio-diversity including traditional medicine and African IKS-based rural communities. Despite these potentialities, they lacked the minimum requirements of achieving the status of a CoE in terms of infrastructural resources, human capital and ability to collaborate across disciplines and institutions on long-term projects that are locally relevant and internationally competitive to enhance the pursuit of IKS research excellence and capacity development. Therefore, the process of building the CIKS as a CoE on IKS involved complementing the potentialities of these previously disadvantaged institutions together with the existing capacities of the two other partner institutions, i.e. University of KwaZulu-Natal (UKZN) and University of South Africa (UNISA). These institutions had already identified IKS as a tool of transformation in their core business of research, teaching, learning and community engagement.

The 2009 IKS institutional capacity review at UKZN revealed that its IKS research and postgraduate training capacity could be utilized to empower and facilitate IKS collaboration with other institutions within and outside South Africa to meet the requirements of CoE mandated areas in IKS as a new field of enquiry. The DST-NRF SARChI Chair in Development Education located at UNISA championed IKS research and post-graduate training. These five higher education institutions provided the appropriate location for developing CIKS into a CoE in Indigenous Knowledge Systems.

The establishment of the CIKS was formalized by the signing of an agreement in 2014 between the NRF and the University of KwaZulu-Natal, as the CIKS hub. This indicated that UKZN assumed the responsibility of oversight and effective integration of the CoE into its broader institutional context and to meet all basic infrastructure and some of its administrative needs. The signing of an annual Service Level Agreement (SLA) between the NRF and UKZN supported this. This outlines the CIKS developmental stages, timeframes, specific stage activities, short and long-term outputs, standard output targets and financial reports. UKZN as the host institution of CIKS has a contractual agreement with the Director of the Centre.
The CIKS partner institutional commitment was demonstrated by the signing of a consortium agreement by all the respective DVCs (Research) of the partner institutions. The agreement stipulates key definitions, commencement and duration, agency (rights, duties, obligations and liabilities) suspensive conditions, CIKS governance structures and their functions, structure of agendas, confidentiality, functions of the hub, key performance areas, financial management, intellectual property, indemnity and legal obligations.

2. Identification of CIKS Focus Areas
The existing IKS related activities at the CIKS partner institutions provided an important base for the establishment of its research focus areas in its mandated key performance areas. The focus areas include traditional medicine; food security; bio-diversity and environmental management, including climate change and IKS curriculum studies and development with (an emphasis on emerging quest for Non-western paradigms). Most of the CIKS partner institutions are located in predominantly rural provinces where majority of the people depend on their indigenous knowledge systems (IKS) for livelihood in terms of healthcare, food security, biodiversity and environmental management, including climate change adaptation and mitigation. The CIKS has since its inception recognized that in order to ensure the transformative sustainability of IKS, there is need to integrate it in the educational system at all levels. This was also to facilitate the building a critical mass of IKS human capital for IKS development.

This CIKS Self-Assessment Report is a consolidation of the achievements, impact, sustainability and challenges experienced by its partner institutions since its inception (2014). The review was based on the collection of primary and secondary data from the various research, academic and community engagement units in the partner institutions. The compilation of the report involved in-depth interviews, focus group discussions, reviewing documents such as faculty/academic calendars, research output reports, student administration databases. The purpose was to determine the IKS capacity in the core business of the partner institutions on the CIKS mandated areas, i.e.: research; education and training; information brokerage; networking; service rendering, including community engagement. The use of secondary data was appropriate for the review because it helped to complement and cross-reference the primary data.

The following information and Figures reflect the CIKS impacts in its developmental route:

1. Integration of IKS into institutional curriculum and policy development: The CIKS partner institutions have recognized the strategic importance of IKS in realizing institutional excellence and transformation. This is articulated in their institutional visions, missions and strategic plans. The incorporation of the holistic, cultural and community-based nature of IKS in the core business of higher education and research institutions enriches the relevance of the National System of Innovation (NSI), especially by inculcating Ubuntu normative values in research and human capital development (Figure 1).
2. **Building critical mass of IKS human capital:** One of the mandates of the CIKS is to address the lack of a critical mass of IKS human capital nationally. The CIKS has since its inception (2014), facilitated the introduction of IKS education and training programmes within and outside its partner institutions (Figure 2).

3. **Participation of Postdoctoral and emerging researchers in new areas of IKS development:** The CIKS acknowledges the contribution and hard work of Postdoctoral and Emerging Researchers in its development route towards excellence and transformative sustainability. The building of CIKS multi- and transdisciplinary collaborations and networks has led to the emergence of new areas of IKS development: IKS-based Sexual and Reproductive Healthcare, Indigenous Climate Science, IKS-based Mental Healthcare and Cultural Heritage and Wildlife Conservation. This necessitated the recruitment of Postdoctoral and Emerging Researchers to manage these new flagship research platforms. Their involvement is part of building of a critical mass of IKS human capital and networks in these new flagship areas (Figure 3).

4. **Building CIKS networks and partnerships for IKS development and transformative sustainability:** The CIKS has since its inception recognised the importance of establishing national and international IKS networks and partnerships for knowledge exchange, research capacity building and human capital development. For example, the formation of the Southern African Development Community IKS Scientific Community of Practice (CoP) serves as a strategic regional platform for promoting CIKS excellence and transformative sustainability in IKS research, innovation, human capital development and community engagement (Figure 4).

5. **CIKS in Knowledge Brokerage and Service Rendering:** In spite of the fact that the majority of local communities in South Africa still depend on their IKS for livelihood, these knowledge systems tend to be marginalized in policy development and implementation. Therefore, the CIKS has taken the initiative to work with both the private and public sectors in the mitigation of the disjuncture between academia, community, business and industry (Figure 5).

6. **CIKS Marketing Platforms for Sustainability and Impact:** As a new area of enquiry, IKS requires concerted efforts to ensure its transformative sustainability and impact. Therefore, the CIKS has since its inception created and been involved in a diversity of marketing platforms to this effect (Figure 6).

In its prospects and challenges of attaining CoE status, the CIKS makes the following recommendations as part of its long term strategy:

(a) The CIKS attains recognition as a CoE based on its achievements and impacts within 4 years of existence;

(b) Provision of resources (financial, material and human) to accelerate its transformative sustainability impact in IKS development within and outside South Africa;

(c) Increased working relationship with established and strategic research, innovation, human capital development and funding instruments to increase its capacity (nationally, regionally,
continentally and internationally) in the mandated areas in promoting the contribution of IKS in the global knowledge economy;

(d) Institutionalization of IKS at all higher education institutions through policy and curriculum development for a paradigm shift in their core business activities; building of a critical mass of IKS human capital; accreditation and certification of IK-holders and practitioners as co-producers of knowledge through recognition of prior learning;

(e) Support the commercialization and beneficiation of IKS-based innovation value chains and platforms for sustainable community livelihood and development
UKZN
IKS is a Signature Project for promoting African Scholarship as articulated in the institutional 2007-2016 Strategic Plan, institutional IKS Policy (2014). CIKS centrally positioned within the UKZN Institutional Research Office, and development of multi- and trans-disciplinary IKS Honours programmes for each of the 4 colleges for IKS human capital development.

UNISA
IKS is central to the activities of The School of Transdisciplinary Research Institutes, especially the Archie Mafeje Research Institute (AMRI) and Institute for African Renaissance Studies (IARS). It is also incorporated in the activities of the Academy of African Languages and Science (AALS) within the School of Interdisciplinary Research and Graduate Studies. The Department of Science and Technology Education have placed a strong emphasis on the role of IKS in Science Education, Technology Education and Environmental Sustainability.

UNIVEN
IKS was identified as a strategic opportunity for the realization of the outcomes of the UNIVEN institutional 5 year strategic plan (2012–2016). The Institute for Rural Development (IRD) is a flagship unit for promoting excellence in participatory action research, teaching and learning as well as postgraduate studies on rural transformation and development. IKS is an integral part of the academic and research programmes in the School of Human and Social Sciences. The schoolhouses the MER Mathivha Centre for African Languages, Arts and Culture.

NWU
IKS is a flagship programme in research, teaching, learning and community engagement; the first higher education institution in South Africa to introduce accredited IKS teaching and learning programmes; NWU coordinates the IKS Node of Southern Africa Network for Biosciences (SANBio) as a NEPAD Agency regional research, development and innovation flagship project on health and nutrition involving 12 southern African countries.

UL
IKS has been identified as a niche area in the promotion of sustainable rural community development and innovation at UL, through the Centre for Rural Community Empowerment (School of Community Rural Development and Environmental Sciences); the Limpopo Agro-Food Technology Station (LATS).
Figure 2: BUILDING CRITICAL MASS OF IKS HUMAN CAPITAL

**FULL BURSARIES:**
Increased postgraduate students full bursaries support

**TOP UPS:**
Contribution to postgraduate support at capped amount of R 20 000

**2014**
(12 students)

**2017**
(67 students)

**2016-2017**
10 students

**IMPACT**
Contribution to IKS Human Capital Development across Disciplines and Sectors in line with transformation and equity targets, including Ministerial guidelines on Nationality:

**TARGETS:**
- 55% Female; 80% African; 87% South African
- 2014 (65% Female) – 2017 (70% Female)
- 2014 (87% African) – 2017 (85% African)
- 2014 (59% South African) – 2017 (65% South African)

**RUNNING EXPENSES:**
Supporting postgraduate student activities within and outside the consortium

**2014**
(600 students)

**2017**
(1029 students)

**INTERNSHIPS:**
In addition to the Human Capital Development (HCD) targets, the CIKS initiated national and international IKS related internship programmes

**NON-DST-NRF FUNDED**
Students from within and outside CIKS partner institutions benefited from its activities (research, human capital development, knowledge brokerage, supervision, editing, reviewing and examining)

National
79%
International
21%
Figure 3: POSTDOCS / EMERGING RESEARCHERS IN NEW AREAS OF IKS DEVELOPMENT

**IKS AND CLIMATE CHANGE**
Coordinating tool for interfacing conventional weather and IKS-based climate (change) information services which are culturally, ecologically and linguistically specific.

**IKS-BASED SEXUAL AND REPRODUCTIVE HEALTHCARE (SRH)**
Coordinating research, innovation and community engagement on IKS-based Sexual and Reproductive Healthcare (SRH).

**IKS-BASED MENTAL HEALTHCARE**
Development of comparative knowledge on mental healthcare across knowledge and cultural systems.

**CULTURAL HERITAGE AND WILDLIFE CONSERVATION**
Interfacing cultural heritage with contemporary conservation practices for increased community participation.

**IMPACT**
Building of a critical mass of IKS human capital and networks in new CIKS flagship areas involving Postdoctoral and Emerging Researchers
60% Female; 40% African; 40% South African; 30% SADC:

Conventional weather information services becomes more culturally, ecologically relevant and accessible.

Established platform for sharing SRH experiences and networks among researchers and IK holders and practitioners.

A global society recognizing the impact of culture, language, environment, bioethics, politics, economics, technology on mental healthcare.

Increased and improved local community participation in natural resource management and associated conflicts.

IKS-BASED SEXUAL AND REPRODUCTIVE HEALTHCARE (SRH)
Coordinating research, innovation and community engagement on IKS-based Sexual and Reproductive Healthcare (SRH).

Increased and improved local community participation in natural resource management and associated conflicts.
Figure 4: BUILDING CIKS NETWORKS AND PARTNERSHIP FOR IKS DEVELOPMENT AND SUSTAINABILITY

Signed Memoranda of Understanding
Institutionalisation of CIKS partnerships and provision of strategic opportunities for IKS development and sustainability

Inclusion of IK-Holders and practitioners in knowledge transfer
Support and mentorship opportunities for IKS researchers

Conferences/workshops, colloquia, symposia
The expansion of national and international networks for IKS research, human capital development

Southern African Development Community IKS Scientific Community of Practice (CoP):
A strategic regional platform for IKS excellence and transformative sustainability

Development of new CIKS flagship areas:
Indigenous Mathematics; IKS-based Early Childhood Development; IKS-based Sexual and Reproductive Healthcare; Indigenous Climate Science; IKS-based Mental health; IKS in Bioethics for Public Healthcare

IKS Special Publications
Enhancement of IKS knowledge production and visibility:
Four Special Issue Publications (2014 – 2017)

National and International Multi- and transdisciplinary platforms, CIKS as a one stop shop for knowledge production, innovation, human capital development, knowledge brokerage, networking and community engagement

Inclusion of IK-Holders and practitioners in knowledge transfer
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National and International Multi- and transdisciplinary platforms, CIKS as a one stop shop for knowledge production, innovation, human capital development, knowledge brokerage, networking and community engagement
CIKS working with both private and public sector in the mitigation of the disjuncture between academia, community, business and industry.

Integration of local community-based knowledge systems into urban organic farming value chain
Collaboration with Institute of Organic Agriculture (FiBL) in Switzerland, eThekwini Municipality and GreenCamp Gallery Project, Durban South Africa to improve food security, urban environmental health, urban greening, income generation and employment opportunities.

Co-ordinating the Recognition of Prior Learning (RPL) Pilot for Indigenous Knowledge Holders and Practitioners
Establishment of norms and standards for Certification and Accreditation of IK holders and practitioners in collaboration with Department of Science and Technology (DST), South African Qualification Authority (SAQA), and National Department of Health

Facilitating the transformation of higher education institutions within and outside South Africa
Increased IKS human capital development through curriculum development. Collaborating institutions: Durban University of Technology, University of Zululand, University of Mpumalanga

Broadening regional and continental impact of IKS
University of Rwanda and Rwanda Ministry of Higher Education, Science and Technology (Rwanda); University of Namibia

Integration of IKS in Local and Provincial Policy Development
KwaZulu-Natal Provincial Departments of Social Development and Economic Development, Tourism and Environmental Affairs

Integrating African Traditional Medicine (ATM) with Biomedical Sciences
Opportunity for two knowledge systems to interact and be complementary for improved public healthcare; mitigate the disjuncture between ATM and biomedicine. Collaborating institutions: School of Pharmacy, University of Nottingham, UK, Mbarara University of Science and Technology (MUST), Uganda

Collaboration with Institute of Organic Agriculture (FiBL) in Switzerland, eThekwini Municipality and GreenCamp Gallery Project, Durban South Africa to improve food security, urban environmental health, urban greening, income generation and employment opportunities.

Figure 5: CIKS IN KNOWLEDGE BROKERAGE AND SERVICE RENDERING
Figure 6: CIKS MARKETING PLATFORMS FOR SUSTAINABILITY AND IMPACT

CIKS researchers' involvement in advisory capacity in public and private sector management and editorial boards
Increased CIKS networks, research productivity and communication channels

CIKS online marketing channels
Twitter: 201 followers
Facebook: 130 followers

CIKS communication strategies and channels

Institutional communication channels
Institutional corporate offices/public relations offices use their communication linkages to disseminate IKS information
ORGANIZATIONAL CONTEXT

Effective Governance and Management

Profile of CIKS Principal Investigator: Prof. Hassan O. Kaya

The CIKS principal researcher and Director, is Prof. Hassan Omari Kaya. He has a Post-Doctorate Certificate in International Agricultural Development (Rural Development) from the Centre for Advanced Training in Agricultural Development, Technical University Berlin (West), Germany; Ph.D. in Sociology of Development and International Political Economy, (MAGNA CUM LAUDE) from Freie University Berlin, Germany, Masters in Development Sociology, Freie University, Berlin, Germany; M.A. in Sociology of Development: University of Dar es Salaam, Tanzania, and BA with Education (Hons) from University of Dar es Salaam, Tanzania.

Prior to his appointment as Director of CIKS, Prof. Kaya was the Research Leader of the IKS Signature Project at the University of KwaZulu-Natal; initiator and coordinator of the IKS Teaching and Research Programme at the North-West University (South Africa); coordinated the NEPAD Agency IKS Regional Node for Southern Africa encompassing 12 countries; Member of the Department of International Relations and Cooperation (DIRCO) Preparatory (Content) Committee for COP 17 UN Conference on Climate Change (2011).

Key Contributions by CIKS Director

Prof. Kaya has in IKS human capital development and knowledge production, successfully supervised more than 20 IKS postgraduate students at Masters and Doctoral levels and published over 50 peer-reviewed articles on a wide range of themes related to African Indigenous Knowledge Systems and sustainable development.

He is also the Patron of the African Young Scientists Initiative on Climate Change and Indigenous Knowledge Systems, which organized the first International Student Conference on IKS and Climate Change and the COP17 Round Table Discussions in Durban (2011) on the Role of IKS and African Young Scientists in Climate Change; initiator of Pan-African IKS-informed Climate Service Platform and Strategy for Natural Resource Management and Sustainable Livelihood. Prof. Kaya was the first Research Fellow at the Sultan Hassanal Bolkiah Institute of Education, University of Brunei Darussalam, Brunei Darussalam, South-East Asia: 1995/96.
Prof Kaya has presented IKS papers and organized a substantial number of national and international conferences within and outside South Africa on IKS and sustainable development. These include:

(a) The SADC Regional Workshop on IK Community Innovations in the Biosciences and Technology, at Kwa Maretane Conference Centre, in Rustenburg (South Africa) 17-19 August 2010. This was done in collaboration with The Technical Centre for Agricultural and Rural Co-operation ACP-EU (CTA), The NRF, The National IKS Office (DST), NEPAD/SANbio;

(b) The first African Young Scientists Conference on African Young Scientists on Climate Change and Indigenous Knowledge Systems (AYSICCIKS) in Kopanong, Johannesburg (2011);

(c) Peace Justice and Human Rights Workshop in collaboration with The Centre for Peace Culture (Sudan University of Science and Technology, Khartoum, Sudan, And Ministry of Justice (Sudan) in Khartoum, Sudan (5-8 January 2012);

(d) The International Conference on Indigenous Knowledge Systems and Environmental Ethics: Implications for Peace-building and Sustainable Development, 28-30 April 2015, University of KwaZulu-Natal, Durban, South Africa. This was organized in collaboration with The Africa Regional Programme of the United Nations University for Peace (UPEACE), Addis Ababa (Ethiopia);

(e) International Symposium on Indigenous Knowledge Systems and Public Health Care in Eastern and Southern Africa, 25-26 April 2016. This was done in collaboration with the University of Rwanda, Kigali, Rwanda;

(f) BRICS Countries International Conference on Indigenous Knowledge Systems for Sustainable Food Security and Environmental Governance for Climate Change Adaptation, 13-14 September 2016, Moses Mabhida Stadium, Durban, South Africa;
The CIKS Steering Committee

The CIKS Steering Committee as an advisory board provides strategic direction to ensure the Centre’s alignment with its strategic focus areas of research and human capital development. Table 1 lists the members of the CIKS Steering Committee.

Table 1: Composition of CIKS Steering Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Institutional Affiliation</th>
<th>Gender</th>
<th>Race</th>
<th>Nationality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof D Ramjugernath</td>
<td>DVC (Research), University of KwaZulu-Natal</td>
<td>Male</td>
<td>Indian</td>
<td>South African</td>
</tr>
<tr>
<td>Prof HO Kaya</td>
<td>Director, CIKS</td>
<td>Male</td>
<td>African</td>
<td>South African</td>
</tr>
<tr>
<td>Prof J Singh</td>
<td>DVC (Research, Innovation and Partnerships), University of Limpopo</td>
<td>Female</td>
<td>Indian</td>
<td>South African</td>
</tr>
<tr>
<td>Prof L Teffo</td>
<td>Director, School of Transdisciplinary Research Institutes (STRI), University of South Africa</td>
<td>Male</td>
<td>African</td>
<td>South African</td>
</tr>
<tr>
<td>Prof E Ebenso</td>
<td>Executive Dean: Faculty of Agriculture, Science and Technology, North West University</td>
<td>Male</td>
<td>African</td>
<td></td>
</tr>
<tr>
<td>Prof O Mwandemele</td>
<td>Pro Vice Chancellor (Academic Affairs), University of Namibia</td>
<td>Male</td>
<td>African</td>
<td>Namibian</td>
</tr>
<tr>
<td>Prof G Ekosse</td>
<td>Director (Research and Innovation), University of Venda</td>
<td>Male</td>
<td>African</td>
<td>Cameroonian</td>
</tr>
<tr>
<td>Prof GM Nkondo</td>
<td>Member, Freedom Park Council</td>
<td>Male</td>
<td>African</td>
<td>South African</td>
</tr>
<tr>
<td>Dr N Makgalemele</td>
<td>Acting Director General and Deputy Director General (Land Planning and Information), Department of Rural Development and Land Reform</td>
<td>Female</td>
<td>African</td>
<td>South African</td>
</tr>
<tr>
<td>Prof Y Seleti</td>
<td>Chief Director (Science Missions), Department of Science and Technology</td>
<td>Male</td>
<td>African</td>
<td>South African</td>
</tr>
<tr>
<td>Mr N Sassman</td>
<td>Director, Research Chairs and Centres of Excellence (RCCE), National Research Foundation</td>
<td>Male</td>
<td>Coloured</td>
<td>South African</td>
</tr>
<tr>
<td>Mr F Mazibuko</td>
<td>Professional officer, (RCCE), National Research Foundation</td>
<td>Male</td>
<td>African</td>
<td>South African</td>
</tr>
</tbody>
</table>

The CIKS Management Committee

The CIKS management committee is responsible for the operational activities of the Centre; i.e.: research, education and training support, knowledge brokerage, networking and service rending. It is comprised of representatives of the collaborating institutions, including the Director and Research Manager. Table 2 shows members of the CIKS Management Committee.
Table 2: Composition of CIKS Management Committee

<table>
<thead>
<tr>
<th>Name</th>
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<th>Nationality</th>
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</thead>
<tbody>
<tr>
<td>Prof HO Kaya</td>
<td>Director, CIKS</td>
<td>Male</td>
<td>African</td>
<td>South African</td>
</tr>
<tr>
<td>Dr M Chinsamy</td>
<td>Research Manager, CIKS</td>
<td>Female</td>
<td>Indian</td>
<td>South African</td>
</tr>
<tr>
<td>Prof N Mollel</td>
<td>University of Limpopo</td>
<td>Male</td>
<td>African</td>
<td>South African</td>
</tr>
<tr>
<td>Prof S Shava</td>
<td>University of South Africa</td>
<td>Male</td>
<td>African</td>
<td>Zimbabwean</td>
</tr>
<tr>
<td>Mr Motheo Koitsiwe</td>
<td>North West University</td>
<td>Male</td>
<td>African</td>
<td>Malawian</td>
</tr>
<tr>
<td>Prof MA Masoga</td>
<td>University of Limpopo</td>
<td>Male</td>
<td>African</td>
<td>South African</td>
</tr>
<tr>
<td>Prof M. Chimonyo</td>
<td>University of KwaZulu-Natal</td>
<td>Male</td>
<td>African</td>
<td>Zimbabwean</td>
</tr>
<tr>
<td>Mr Tom Suchanandan</td>
<td>Department of Science and Technology</td>
<td>Male</td>
<td>Indian</td>
<td>South African</td>
</tr>
</tbody>
</table>

**CIKS Scientific Committee**

Besides the Management Committee, the CIKS has constituted a multi and transdisciplinary Scientific Committee composed of researchers, IK-holders and practitioners from within and outside South Africa. These assist the CIKS to drive its research and scientific agenda in its thematic areas based on their expertise and knowledge. Some of the members assist the CIKS in postgraduate research supervision and as reviewers of IKS research outputs for research publications. The members of the CIKS Scientific Committee is shown in Table 3 (see in attached Annexure Booklet).

**Appropriate Staffing and Researchers for CIKS Sustainable Development and Impact**

The multi, inter, trans-disciplinary nature of IKS requires that CIKS, as a developmental Centre, is supported by teams of intellectually and professionally capable national and international IKS scholars and researchers to enhance its excellence and involvement of community IK-holders and practitioners for community relevance. They play an active role in CIKS governance, and its mandated activities as research supervisors, examiners, reviewers and editors. These CIKS composite national and international teams have been able to integrate and contribute towards the successful progress of the Centre to its status. This is reflected in the composition of CIKS steering, management and scientific committees (see Tables 1-3).

Tables 2 and 3 reflects the multi and trans disciplinary diversity of the CIKS IKS professionals and knowledge holders, including practitioners, from within and outside South Africa supporting its mandated research, human capital, community engagement activities. These established IKS
researchers, ably supported by emerging IKS researchers, play an active role as research supervisors, examiners and reviewers as part of the CIKS strategy in building a critical mass of IKS human capital. The national and international profile of CIKS, including the active participation of IK-holders and practitioners has enabled CIKS to initiate research and community engagement exchange programmes involving researchers and postgraduate students. This is exemplified by the increasing number of CIKS researchers invited as guest lecturers, visiting professors, keynote speakers to various international platforms and institutions. The CIKS also hosted high caliber international researchers and institutional leaders, including vice chancellors, deputy vice chancellors (Research, Innovation and Partnerships) from collaborating institutions.
CIKS FOCUS AREA

The identification of CIKS focus areas was influenced by its developmental route in the attainment of CoE status. It was also influenced by existing national challenges of healthcare provision, food security, environmental degradation, including climate change and transformation of education system. The partner institutions ecological location and existing IKS capacity provided the basis for the CIKS thematic focus areas. These include traditional medicine, food security, biodiversity and environmental management, including climate change adaptation and mitigation and IKS curriculum development. These are discussed in detail below.

However, the CIKS has since its inception recognised the challenges facing IKS development, including the identified research focus areas in achieving transformative sustainability across its mandated areas. (i) IKS has not yet been fully integrated into the core business of higher education and research institutions in terms of research, teaching and learning programmes; (ii) lacks a critical mass of human capital conversant with IKS epistemologies, research methodologies, value systems, (iii) lacks specific IKS related employment opportunities for its graduates; (iv) limited internationally recognised IKS publication platforms.

In order to mitigate these challenges the CIKS has managed within 4 years of its establishment to do the following:

(a) Integration of IKS into higher education curriculum through establishment of IKS teaching and learning programmes at partner institutions; i.e.: North West University has an established 4 year BIKS and MIKS programmes with modules which integrate both the natural and social sciences. University of Limpopo and University of Venda have also introduced BIKS programmes. University of KwaZulu-Natal is introducing an IKS Honours programme as a pipeline to Masters and Doctoral programmes. The objective is to build a critical mass of human capital conversant with IKS epistemologies, research methodologies and value systems. The CIKS is establishing Special IKS Collections across partner institutions to provide IKS reference materials to support the partner and collaborating institutions’ IKS research, teaching, learning and community engagement;

(b) Establishment of national and international IKS platforms for knowledge exchange, research capacity building and human capital development such as the formation of the Southern African Development Community IKS Scientific Community of Practice (CoP) as a strategic regional platform to contribute to IKS excellence in research, innovation, human capital development and community engagement;

(c) In order to facilitate employment opportunities for IKS graduates the CIKS has established networks and partnerships in private and public sectors to provide internship opportunities. This are meant to expose IKS graduates to the world of work;

(d) Currently, CIKS endeavours to have its own accredited IKS journal. Meanwhile, it is working with editorial boards of accredited DHET journals to provide options for IKS researchers in IKS special issue publications within the CIKS research focus areas.
Traditional Medicine

Most of the CIKS partner institutions are located in predominantly rural provinces characterised by limited modern healthcare services. The majority of the people depend on traditional medicine (TM) for primary healthcare. The CIKS partner institutions were before its inception (2014) engaged in the promotion of TM in terms of research, teaching and community engagement. The CIKS realizes that there is a symbiotic relationship between African Traditional Medicine (ATM) and conservation of biodiversity through sustainable harvesting to prevent biodiversity loss. Therefore, it collaborates with African Traditional Health Practitioners (ATHPs) in research, human capital development and promoting sustainable harvesting of medicinal plant species, to protect, promote and preserve ATM and associated biological resources and knowledge systems. The CIKS also recognizes the importance of interfacing TM with other knowledge systems including the pharmaceutical sciences to meet the global challenges of public healthcare such as dread diseases (HIV/AIDS, TB, Malaria, Diabetes, etc.).

Figure 7 reflects CIKS achievements and impact in promotion of African Traditional Medicine for improved public healthcare.
Figure 7: CIKS ACHIEVEMENTS AND IMPACT IN PROMOTION OF AFRICAN TRADITIONAL MEDICINE

Platforms managed by CIKS postdoctoral and emerging researchers
IKS-based Sexual and Reproductive Healthcare and IKS-based Mental Healthcare

Partnership with University of Nottingham (UK) and Mbarara University of Science and Technology (MUST, Uganda) through the World Bank Project on Pharm-Biotechnology and Traditional Medicine Center (PHARMBIOTRAC)

Coordination of the pilot project on Recognition of Prior Learning of IK Holders and Practitioners In partnership with Department of Science and Technology, South African Qualification Authority, Department of Health involving Gaqa Traditional Medicine School in Umlazi, Durban, South Africa

A workshop for ATHPs 30 and 31 March 2016
In collaboration with the North West Provincial Department of Health (Doh), South African Bureau of Standards (SABS) and the Small Enterprise Development Agency (SEDA) in the Ngaka Modiri Molema Municipality

Traditional Healers Visit UKZN Labs
Mitigation of the disjuncture between ATHPs and biomedicine through provision of opportunity for ATHPs to interact with biomedical students and researchers

Special Issues

Strategic partnerships with Traditional medicine instruments
DST-NRF South African Research Chair in Indigenous Healthcare Systems; DST-NRF South African Research Chair in Chemistry of Indigenous Medicinal Plants

In collaboration with Mount Kenya University (Kigali), the Africa Programme-UN University for Peace (Addis Ababa, Ethiopia), University of Dar es Salaam, Tanzania, University of South Africa and the University of Rwanda (Rwanda). This symposium was meant to enrich the public health equity and leadership

Creation of opportunities for contribution of Traditional Medicine in the global public healthcare knowledge pool. The CIKS has managed since its inception to build networks and partnerships to this effect.
Food Security
The CIKS advances the promotion of community-based knowledge systems as a viable solution to mitigate against national and global ecological challenges affecting sustainable food security, biodiversity, human and environmental health. This is based on the argument that local and global strategies that work in harmony with nature are more accessible, affordable and hence sustainable. In South Africa and Africa at large, smallholder farmers, the majority being rural women, depend on their IKS including locally available resources for food security and environmental management. They have been able to produce food with minimal conventional practices. This implies that the promotion of IK-based food security strategies and biodiversity need to be taken seriously in agricultural policy development, with the active participation of IK-holders and practitioners themselves.

Figure 8 reflects CIKS achievements and impact in promotion of IK-based food security strategies.
Figure 8: CIKS ACHIEVEMENTS AND IMPACT IN PROMOTION OF IK-BASED FOOD SECURITY STRATEGIES

Integration of IKS into Urban Organic Farming Value Chain
In collaboration with Ethekwini Municipality and Institute of Organic Agriculture (FiBL) in Switzerland, African Development Bank, Food Connect Campaign, Green Camp Gallery Project. Contributing innovative solutions to urban unemployment and food insecurity.

Strategic Partnerships with IKS-related Food Security Instruments
DST-NRF South African Research Chair in Rural Agronomy and Development CoE in Food Security at University of Western Cape.

Special Issues

BRICS Countries International Conference on Indigenous Knowledge Systems for Sustainable Food Security and Environmental Governance for Climate Change Adaptation, Durban, South Africa. September 2016
In collaboration with African Centre for the Constructive Resolution of Disputes (ACCORD); National Institute for the Humanities and Social Sciences (NIHSS), South African BRICS Think Tank (SABTT) and Municipal Institute for Learning (MILE).

Promotion of IK-based food security strategies through participation of IK-holders and practitioners.
Environmental Management and Climate Change

In their pursuit for African human and other natural resources, the colonizers in Africa engaged in exploitation these resources without much consideration of the IKS including value and belief systems, which formed the symbiotic relationship between African people and their natural environment. Therefore, the CIKS recognizes that the rampant and wanton destruction of forests, animals, mineral and land degradation led to the loss of biological and cultural diversity, including associated indigenous knowledge and languages. The restoration, respect and adherence to cultural beliefs and practices adopted by local communities such as the role of ancestral spirits, taboos and totems are innovative tools in environmental management and biodiversity conservation. Moreover, the CIKS acknowledges the impact of climate change on environment and biodiversity through the loss of biological species. As a result of the symbiotic relationship between their livelihood, the natural environment and spiritual world, African local communities in their diverse ecosystems, have over the years developed unique knowledge, skills, technologies and belief systems to mitigate and adapt to climate change. These community-based knowledge systems need to be taken seriously in the design and adaptation of modern mitigation and adaptation policy strategies. The CIKS partner institutions in collaboration with community knowledge holders and other stakeholders from within and outside South Africa are active in research and human capital development to promote IKS associated with climate change mitigation and adaptation.

Figure 9: CIKS Achievement and Impact in Promoting Culturally and Ecologically Specific Approaches to Environmental Management, Biodiversity Conservation and Climate Change Adaptation and Mitigation
Figure 9: CIKS ACHIEVEMENT AND IMPACT IN PROMOTING CULTURALLY AND ECOLOGICALLY SPECIFIC APPROACHES TO ENVIRONMENTAL MANAGEMENT, BIODIVERSITY CONSERVATION AND CLIMATE CHANGE ADAPTATION AND MITIGATION

Initiating International Internship Programme.
Hosted 2 French interns from Université Paris-Saclay, France

Platforms managed by CIKS postdoctoral and emerging researchers
Cultural heritage and Wildlife Conservation platform

Promotion of culturally and ecologically specific approaches to environmental management, biodiversity conservation and climate change adaptation and mitigation.

Strategic partnerships with biodiversity and environmental instruments
DST-NRF South African Research Chair in Ecosystem Health and Biodiversity in KwaZulu-Natal and the Eastern Cape, DST-NRF South African Research Chair in Biodiversity Value and Change in the Vhembe Biosphere Reserve (UNIVEN)

Development of a Pan-African IKS-Informed Climate Information Service and Knowledge Management in 2017
Making conventional weather services more relevant and accessible to local communities.
In collaboration with African Climate Policy Center (ACPC) of the United Nations Economic Commission for Africa (UNECA) in Addis Ababa, Ethiopia; Department of International Relations and Co-operation (DIRCO), South Africa; United Nations Development Programme (UNDP), Tanzania, Institute for Meteorological Training and Research (IMTR), Kenya

A Workshop on indigenous weather and climate knowledge
Sharing views on interfacing indigenous and conventional weather forecasting between stakeholders, including IK holders. In collaboration with Lebowakgomo Lepelle Nikumpi Municipality, Limpopo, Traditional councils, Council for Scientific and Industrial Research (CSIR), South African Weather Bureau (SAWB), Department of Agriculture (DoA), and UL

Special Publication

Joint collaboration with Africa Programme: UN University of Peace (Addis Ababa, Ethiopia); University of Rwanda (Rwanda); KZN Provincial Department of Economic Development, Tourism and Environmental Affairs. Creation of a continental forum for a philosophical interrogation on Africa’s conceptualization on indigenous knowledge and environmental ethics
**IKS in Curriculum Development**

One of the major challenges facing IKS development in the lack of critical mass of human capital conversant with IKS worldviews (ontology), ways of knowing (epistemology), research methodologies and value systems (axiology). CIKS acknowledges the increasing realization that indigenous peoples and communities throughout the world have for millennia sustained their unique worldviews and associated knowledge systems in relation to the environment, even while undergoing major social upheavals because of transformative forces beyond their control. The depth of these knowledge systems rooted in the long inhabitation of a particular ecosystem offers lessons that can benefit everyone, from educator to scientist, as we search for a more satisfying and sustainable way to live on this planet. Therefore, the CIKS has since its inception recognized that one strategy of building a critical mass of IKS human capital and ensuring the transformative sustainability of IKS is to integrate it in the educational system at all levels. CIKS recognizes that a significant –paradigm shift” is under way in which indigenous knowledge is recognized as constituting complex knowledge systems with an adaptive integrity of their own.

**Figure 10:** Building a critical mass of IKS human capital for transformative sustainability of IKS
Figure 10: BUILDING A CRITICAL MASS OF IKS HUMAN CAPITAL FOR TRANSFORMATIVE SUSTAINABILITY OF IKS

Building a critical mass of IKS human capital for transformative sustainability of IKS.

IKS integration in the educational system at all levels. A paradigm shift in recognizing and promoting indigenous knowledge as a domain with its own ontology, epistemology and axiology.

Introduction of IKS multi-disciplinary Programmes
A strategic pipeline for IKS human capital development to higher academic levels. This includes Bachelor in IKS programmes (BIKS) at NWU, UL and UNIVEN as well as an IKS Honours programme at UKZN. Graduation of first cohort of BIKS students at NWU (2017)

Establishment of Special IKS Collections
Create an IKS repository for IKS sustainability and support for research, teaching, learning and community engagement activities for partner and collaborating national and international institutions, Bayreuth International Graduate School of African Studies (BIGSAS), University of Bayreuth (Germany)

International Conference on Post-Graduate Students’ Research on IKS in Southern and Eastern Africa. (Durban 20 - 21 November 2018)
Joint collaboration with Africa Programme of the United Nations University for Peace (UPEACE in Addis Ababa, Ethiopia), and the University of Rwanda (Rwanda). Building an African cadre conversant with IKS ways of knowing, research methodologies and value systems; a platform of post-graduate students who pursue pertinent issues of African sustainable development in the context of IKS

National Colloquium on Mother Tongue Language for Science and Technology Student Teachers, 30-31 March 2017
In collaboration with UKZN’s School of Education, the National Department of Basic Education, and the eThekwini Municipal Institute of Learning (MILE). Sensitizing science and technology student teachers on the importance of mother tongue language in science and technology education and to devise creative ways of incorporating IKS into their teaching and research activities.

International Colloquium on Mazisi Kunene’s Contribution to African Scholarship (4 – 5 December 2017)
In collaboration with the Mazisi Kunene Foundation, African Emancipation Student Movement, UKZN; Institute for African Renaissance Studies (UNISA) at the CIKS (UKZN Westville Campus). Discussion on contribution of Prof. Mazisi Kunene’s works to African indigenous scholarship in the global pool of knowledge.

Multi/Inter/Trans-Disciplinary Environmental Education at UNISA
The integration of IKS epistemologies in environmental education through lived experiences of learners in their local communities.
KEY PERFORMANCE AREAS

Research/Knowledge Production

The CIKS as an instrument of the National IKS Policy (2004) has managed to create a paradigm shift in knowledge production (research), by promoting indigenous ways of knowing (epistemology), value systems and participatory approaches in IKS research methodology and process. This is reflected in Table 4 (in attached annexures booklet) and involved the following:

(a) Grounding IKS-related research and publications thematic areas to advance IKS worldview, epistemology and value systems;

(b) Building a critical mass of IKS scholars and communities of practice across the IKS thematic areas, as evidenced by the growing number of multi- and trans-disciplinarity of IKS researchers, postgraduate students, authors;

(c) Promoting participatory research approaches and methods that involve IK-holders and practitioners in the research processes;

(d) The CIKS initiating and participating in global platforms such as:

i. Asian Bioethics Association, which promotes the incorporation of cultural, spiritual and holistic dimensions of IKS in the understanding of bioethics and healthcare in diverse cultural communities. Through this participation CIKS managed to integrate African indigenous ontologies, epistemologies and value systems in these regional bodies;

ii. Developing a Pan-African IKS-informed Climate Information Service (CIS) Knowledge Management platform and Communication Strategy to make conventional weather services more relevant and accessible to local communities.

SELECTED CIKS RESEARCH OUTPUTS IN PEER REVIEWED PUBLICATIONS

Table 4 (in attached annexures booklet) reflects selected IKS research outputs in peer reviewed publications produced by IKS researchers and postgraduate students from partner and collaborating institutions, from within and outside South Africa. The joint research and publications contribute to transformation and equity, especially gender, race and nationality. The CIKS performance is line with Ministerial guidelines.

Table 5 (in attached Annexure Booklet) shows the CIKS research and postgraduate supervisory capacity at partner institutions across disciplines. The multi and transdisciplinary character of CIKS research capacity has promoted a paradigm shift in knowledge production within and outside partner institutions.
Education and Training

In order to meet the challenge of building a critical mass of IKS human capital, the CIKS has since its inception (2014), put emphasis on establishing national and international research, education and training collaboration with other IKS stakeholders. Using diverse engagement platforms, the CIKS provided postgraduate students, interns, researchers and other stakeholders from within and outside the partner institutions, with knowledge and awareness on IKS worldviews, epistemologies, research methodologies and value systems. This provides a common understanding of the nature of IKS as a knowledge domain on its own merit.

For instance, Table 6 (in attached annexures booklet) shows the distribution of CIKS beneficiaries according to gender (2014 – 2017). It indicates that for the period 2014 – 2017, CIKS provided education and training support to beneficiaries across gender and race in the partner institutions. Similarly, Table 7 (in attached annexures booklet) indicates the percentage distribution of CIKS beneficiaries by nationality (2014 – 2017). It reveals that the majority of CIKS beneficiaries (2014-2017) were South Africans. However, in order to promote IKS capacity building continentally and internationally, there were also CIKS beneficiaries from outside South Africa. In this profile of CIKS beneficiaries, the majority were African females at Masters and Doctoral levels and African males at postdoctoral level. CIKS beneficiaries included research staff who participated in CIKS education and training activities within and outside South Africa. It demonstrates CIKS contribution to transformation and equity including enhancing supervisory capacity for IKS development.

At the time of its inception in 2014, CIKS was only able to provide financial support to UKZN IKS postgraduates because the partner institutions had not yet signed the consortium agreement. Table 8 (in attached annexures booklet) reflects the gender distribution of financially supported CIKS postgraduate students (2014 – 2017). It shows that in the period 2015-2017 the majority of the financial beneficiaries at Masters level were female. CIKS financial support enabled postgraduates to complete their studies on time and hence contributed to the building of IKS human capital.

Table 9 (in attached annexures booklet) shows percentage distribution of CIKS financial beneficiaries by nationality (2014 – 2017). It shows that the majority (>70%) of the CIKS financial beneficiaries were South Africans. This is in alignment with the Ministerial Guidelines for IKS education and training support. The CIKS has over time managed to establish international networks and partnerships to promote IKS postgraduate education and training support thereby attracting international postgraduate students (3%) in 2017.

Table 10 (in attached annexures booklet) shows the percentage distribution of CIKS postgraduate beneficiaries across disciplines (2014 – 2017) due to integration of IKS epistemologies and research methodologies: Humanities 2014 (65%) – 2017 (37%); Natural and Applied Sciences 2014 (13%) – 2017 (25%); Health Sciences 2014 (22%) – 2017 (38%). The shift in IKS research and postgraduate training in partner institutions from the IKS dominance in
Humanities to Natural, Applied and Health Sciences was also a result of CIKS advancing particular research focus areas i.e.: Traditional Medicine, Food Security, Biodiversity and Environmental Management. This has enhanced multi-transdisciplinarity in institutional research and productivity (see Table 4 in attached annexures booklet). This also involved experiential learning for CIKS students through partnership with organisations involved in integration of IKS in their core businesses. For instance: CIKS partnership with EThekwini Municipality, Institute of Organic Agriculture (FiBL) in Switzerland and GreenCamp Gallery Project, Durban, South Africa. Integration of IKS in Urban Organic Farming value chain as an Innovative Solution to Unemployment and Food Insecurity.

Table 11 (in attached annexure booklet) shows that the majority (59%) of IKS research supervisors were in the academic and research disciplines related to CIKS research focus areas, i.e.: Natural and Applied Sciences and Health Sciences. This IKS supervision capacity included the involvement of established and emerging researchers as well as IK-holders and practitioners. Table 12 provides a detailed profile of CIKS postgraduate (Masters and Doctoral) training output. It includes associated supervision capacity at the partner institutions (2011 – 2016). It shows that since its inception, there has been an increase in the number of postgraduates with associated supervision capacity across disciplines. Building IKS supervisory capacity has enhanced IKS development within and outside the CIKS partner institutions.

Moreover, as an integral part of developing a pipeline for IKS human capital development at Masters and Doctoral levels, CIKS partner institutions such as North West University, and the University of Limpopo and University of Venda have initiated 4 year accredited Bachelor in IKS programmes that prepare students for direct entry to Masters level. At UKZN, the CIKS has facilitated the development of IKS Honours programmes across all the 4 UKZN Colleges (Agriculture, Engineering and Science, Humanities, Law and Management and Health Sciences). This provides access for students who have 3-year generic Bachelor degrees from within and outside South Africa to an IKS Honours programme and later to Masters and Doctoral levels. These efforts have contributed to the multi-interdisiplinary profile of IKS postgraduate students in the partner institutions.

**IMPACT OF CIKS EDUCATION AND TRAINING SUPPORT ACTIVITIES**

**Contribution to transformation and equity including enhancing supervisory capacity for IKS development.**

Building IKS international networks and partnerships for postgraduate education and training support, including attracting international students.

**Enhancing multi-transdisciplinarity in IKS research, productivity, and supervisory capacity for IKS development within and outside the CIKS partner institutions.**

Experiential learning for CIKS students through partnership with public and private sectors.

**Introduction of undergraduate and postgraduate IKS programmes as a pipeline for IKS human capital development.**
Information brokerage

The CIKS as an instrument for implementing the National IKS Policy (2004) has since its inception endeavoured to be a strategic tool for IK knowledge management to mitigate the marginalization of IKS in the global pool of knowledge. The aspiration to enable South Africa and Africa at large, through IKS, to enter the global knowledge economy on its own terms. Table 13 (in attached annexures booklet) shows collaboration between CIKS partner institutions and other IKS stakeholders in the organization of national and international multi-transdisciplinary IKS-related conferences and symposia during the period 2014 – 2017. This enabled CIKS and its collaborators to share IKS knowledge and experience across cultures, regions, countries and disciplines.

Networking

The CIKS advances a new area of enquiry (IKS) which tended to be marginalized in the search for sustainable solutions towards community livelihood and development. It recognizes that the holistic, cultural and ecological-based nature of IKS requires building a diversity of networks and partnerships across cultures, regions, countries and disciplines. This applies to all CIKS mandated activities. In order to facilitate the building of networks, the CIKS has established research and knowledge platforms (Figure 3). This has enabled IKS national and international engagements between CIKS and IK holders and practitioners, researchers, policy makers and students. Table 14 (in the attached annexures booklet) reflects the formalization of CIKS networks and partnerships through signed Memoranda of Understanding. This has brought about active and formalized collaboration between CIKS and IKS experts and institutions in both the public and private sectors, within and outside the country.

Service Rendering

The CIKS is charged with the responsibility of mitigating the disjuncture between academia, community, business and industry including service rendering. In the context of IKS ontologies, epistemologies, axiology and research methodologies, knowledge resides within communities. Therefore, the CIKS advances a different approach to service rendering by promoting the holistic, cultural, multi-trans-disciplinary and community-based nature of IKS. This has necessitated the CIKS to include IK-holders and practitioners and students in its research and capacity building services and products. Table 15 (in the attached annexures booklet) highlights IKS-related services provided by CIKS to organisations/institutions within and outside South Africa (2014 – 2017). The involvement of IK-holders, practitioners and postgraduate students, in the context of experiential learning, enhanced the CIKS relevance in service rendering.
CIKS has become a strategic tool in social transformation in its advancement of a paradigm shift in knowledge production, utilization and sharing. This includes mitigating the disjuncture between learning and living in the education process through integration of theory and practice. This is reflected in Figure 11: CIKS Models and Scenarios.

Figure 11: CIKS Models and Scenarios
SUSTAINABILITY STRATEGY

(a) The CIKS recognizes that its transformative sustainability goes beyond finance by facilitating the following initiatives:

(b) The integration of IKS in the educational curriculum to create a critical mass of human capital conversant with IKS worldviews, epistemologies and value systems. The CIKS partner institutions have introduced undergraduate and postgraduate IKS teaching and learning programmes as a pipeline for IKS human capital development;

(c) Commercialization of IKS services and products provides business and industry with opportunities to develop unique products that will strategically position national sectors in the global economy. This will lead to improved community livelihood in terms of income generation and employment creation. Examples are: (i) The Department of Pharmacy, University of Limpopo, which has patented a chewable gum composition based on plant extracts as drug delivery systems for the treatment of sores and other oral infectious diseases; (ii) the integration of IKS into urban organic farming value chain for income generation, job creation and urban greening in partnership with the Ethekwini Municipality, Greencamp Gallery and Institute of Organic Agriculture (FiBL) in Switzerland;

(d) Integration and promotion of IKS-based normative values such as Ubuntu for promoting moral regeneration, social cohesion and caring society. This gives IKS societal relevance as a knowledge domain and tool of social transformation in education, industry, business and policy development;

(e) Interface between ATM with other knowledge systems, including pharmaceutical sciences enables ATM to contribute to the global public healthcare knowledge pool. This is done in collaboration with School of Pharmacy, University of Nottingham, UK, Mbarara University of Science and Technology (MUST), Uganda;

(f) Provision of National and International Internship Service Programmes on a fee basis in CIKS focus areas. This initiative has been launched in collaboration with Université Paris-Saclay, France, on IKS-Informed Climate Change Information Service Platform Programme;

(g) The CIKS is working with the Gaqa School of Traditional Medicine (TM) in Umlazi, Durban, to promote an Integrated TM Training Programme. This Programme interfaces TM with basic aspects of biomedical, pharmaceutical, phytochemical sciences and life skills competencies to capacitate ATHPs and unemployed matriculants for improved employment opportunities. It also provides experiential learning for postgraduate and graduate students with the requisite competencies as training facilitators in the various disciplines of the programme;

(h) Integration of IKS in Higher education teaching, learning and research programmes at collaborating institutions within and outside the country. These include the Durban University
of Technology, University of Zululand, and University of Mpumalanga. In this endeavour, CIKS promotes the role of IKS in the transformation of higher education institutions as envisaged in the National IKS Policy (2004).

(i) The CIKS Steering Committee has established a Task Team composed of partner institutions, NRF and DST representatives as a mechanism to ensure that the CIKS partner institutions honour their institutional commitment for its sustainability:

1. Contribute their institutional financial commitments (2% of NRF baseline funding);
2. Play an active role in the activities related to the CIKS mandated areas. This includes collaborative research project initiation, proposal development, postgraduate student supervision and examination, networking and partnerships, commissioned research, community engagement, knowledge brokerage;
3. All CIKS partner institutions are represented on the various CIKS governance structures, i.e.: steering, management and scientific committees.

(j) Ensure effective financial sustainability through:

- IKS researchers receiving salaries from the respective partner institutions;
- Provision of administrative and infrastructural facilities for the Secretariat, researchers, postgraduate students and visiting scholars;
- Provision of research facilities, including access to research equipment, information communication equipment, library;
- Leveraging of third stream income through national and international grants awarded to IKS researchers;
- Commissioned research for public and private organisations;
- Subsidies for IKS research publications and completed Masters and Doctoral postgraduates;
- Conference registration fees;
- Travel and exchange grants through collaborative partnerships with institutions within and outside South Africa; UKZN as the host institution provides financial support towards long term sustainability through international collaborations and multi-stakeholder project development.

(k) Working with partner institutions’ Human Resource offices to supports members of the Secretariat to engage in continuous improvement and career development. This includes biannual review of the professional development plan created in conjunction with the members of the secretariat to identify the necessary skills and resources to support their career goals and the CIKS needs. Furthermore, CIKS supports partner institutions’ mechanisms and procedures, which rewards staff in their mandated key performance areas.
RECOMMENDATIONS

Unlike other CoEs in South Africa which are based on western paradigmic knowledge systems, the CIKS is promoting excellence and relevance in a knowledge domain characterized by the following challenges: (i) it has not yet been fully integrated into the core business of higher education and research institutions in terms of research, teaching and learning programmes; (ii) lacks a critical mass of human capital conversant with IKS epistemologies, research methodologies, value systems, (iii) lacks specific IKS related employment opportunities for its graduates; (iv) limited internationally recognised IKS publication platforms; (v) lack of institutional commitment.

In spite of the above-identified challenges, the CIKS self-assessment revealed that it is an important instrument for promoting the transformative sustainability of IKS within and outside the partner institutions. This has been done through advancing the democracy of knowledge systems as a paradigm shift by mitigation against western knowledge system dominance in the global knowledge economy. The CIKS has contributed to transformation and equity by: (a) enhancing research supervisory capacity for IKS development; (b) building IKS international networks and partnerships for postgraduate education and training support, including attracting international students; (c) enhancing multi-transdisciplinarity in IKS research and productivity; (d) facilitating experiential learning for CIKS students through partnership with public and private sectors; (e) introducing undergraduate and postgraduate IKS programmes as a pipeline for IKS human capital development; (f) promoting equity, especially gender, race and nationality in all CIKS mandated activities through financial support, education and training and involvement of postdoctoral and emerging researchers, especially women, Africans and South Africans; (g) IKS integration in the educational system at all levels; (h) combining theory and practice to mitigate the disjuncture between community knowledge holders and practitioners academia, community, business and industry.

The development of the CIKS research focus areas have also contributed to its transformative sustainability through promotion and creation of: (a) culturally and ecologically specific approaches to environmental management, biodiversity conservation and climate change adaptation and mitigation; (b) IK-based food security strategies through participation of IK-holders and practitioners; (c) Traditional Medicine in the global public healthcare knowledge pool; (d) new CIKS flagship areas involving postdoctoral and emerging Researchers.

The CIKS has also ensured that its programme activities reach a wide audience, nationally and internationally, by establishing marketing platforms to increase its visibility, sustainability and impact. These include online platforms; participation of IKS stakeholders including members of Steering, Scientific and Management Committees in management, editorial and review boards of private and public sectors.
It is on the basis of the above Self-Assessment findings that the CIKS recommends the following:

1. The CIKS attains recognition as a CoE based on its achievements and impacts within 4 years of existence;
2. Provision of resources (financial, material and human) to accelerate its transformative sustainability impact in IKS development within and outside South Africa;
3. Increased working relationship with established and strategic research, innovation, human capital development and funding instruments to increase its capacity (nationally, regionally, continentally and internationally) in the mandated areas in promoting the contribution of IKS in the global knowledge economy;
4. Institutionalization of IKS at all higher education institutions through policy and curriculum development for a paradigm shift in their core business activities; building of a critical mass of IKS human capital; accreditation and certification of IKS holders and practitioners as co-producers of knowledge through recognition of prior learning;
5. Support the commercialization and beneficiation of IKS-based innovation value chains and platforms for sustainable community livelihood and development.