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The next generation:

Ideas and experience in African researcher support

April 2016

The Nairobi Process

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Cover image: Olawale Olayide (left), CIRCLE Visiting Fellow at Kwame Nkrumah University of Science and Technology, undertaking fieldwork on the impact of climate change on farming in Ghana. He is a Research Fellow at the Centre for Sustainable Development, University of Ibadan, Nigeria. © Jon Spaull/SciDev.Net

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Abbreviations

ACU	The Association of Commonwealth Universities
AWARD	African Women in Agricultural Research and Development
CIRCLE	Climate Impacts Research Capacity and Leadership Enhancement
CVF	CIRCLE Visiting Fellow
ERP	Emerging Researcher Programme
KPI	Key performance indicator
MCDC	Malaria Capacity Development Consortium
MOOC	Massive open online course
NUFU	Norwegian Programme for Development, Research and Education
STARS	Structured Training for African Researchers
UCT	University of Cape Town
UNISA	University of South Africa

Acknowledgements

Executive summary

This report forms part of the Nairobi Process, a series of discussions and reports aimed at stimulating debate around Africa-UK research collaboration and the provision of researcher support in African higher education. Supporting researchers early in their careers has emerged as a key issue within the Nairobi Process. In recent years, a steep rise in student numbers across Africa has put increased strain on its heavily-burdened higher education sector, which struggles with limited financial, physical, and human resources. There are insufficient numbers of experienced staff to meet the growing demand for student places, putting academics early in their careers under increased pressure, often with very heavy teaching and administrative workloads. This, in turn, potentially undermines the quality of instruction and research output, and the ability of institutions to recruit and retain talented staff. It is critical, therefore, for universities to act purposefully and strategically to enhance the support they provide to their emerging researchers. Early career researchers need to be equipped with the broad skillset needed to plan their careers and to develop a competitive research profile for themselves and their institution.

This report emphasises the value and the need to invest in the development of early career researchers. As the research leaders of the future, it is they who will direct and shape the development of African higher education and research. This report charts examples of good practice for institutions, donors, and leaders looking to pursue this path. The aim is not to present a comprehensive review of systems of support for early career researchers, but rather to draw on a number of examples to give an indication of existing provision and case studies of more integrated/inclusive systems. In addition to institutional case studies, approaches currently adopted by externally-funded programmes are explored, to see how institutional capacity building for early career researcher development can be integrated within institutional research support systems.

To be sustainable, early career researcher support needs to be designed and developed with consideration of the broader institutional and research environment, particularly with regard to the needs of early career researchers, their supervisors, mentors, and peers. Its value needs to be recognised centrally, and demonstrated and acknowledged through career structures. To be effective, it should be designed to meet the broad spectrum of skills that are needed to become not just a researcher, but a research leader. It should take into consideration the other demands on a researcher's time and consider mechanisms to ensure that research skills development is given sufficient investment. It should give regard to the future profile of research leaders that the institution aims to develop, including the particular needs of those who have been traditionally disadvantaged – in particular women and those from ethnic minorities. In achieving this, the report recognises that resources are constrained and that institutions may need to consider new approaches, forms of collaboration, and funding strategies to enable the development of more holistic and wider-reaching mechanisms of support for early career researchers.

Several themes relevant to developing effective provision for early career researcher support are explored in the report. Firstly, it is important for institutions to identify carefully who they are aiming to support. As both The Nairobi Report and the Foundations for the Future report highlighted, a recurrent theme is the importance of enabling dedicated time for researcher development away from other administrative and teaching responsibilities. Space is needed for researchers to focus on developing their research, networks, and the softer, less tangible skills necessary to communicate and lead effectively. Guidance from a mentor and systematic mentoring support more generally, as well as supervision, can also be valuable sources of advice for early career researchers to develop and progress their research skills and careers.

The formulation of an effective strategy to support the development of early career researchers requires institutional focus. To ensure early career researcher support is integrated into the research culture of an institution, it needs to be valued by research managers and institutional leadership. It is, therefore, important that institutions have the capacity to make the case for researcher support and build an understanding of how best to assign their limited resources in this area. The experience of institutions that have successfully developed more comprehensive support systems suggests that a dedicated team that can link researcher development to institutional objectives can be instrumental to the sustainability of researcher support programmes.

While making a case for researcher development internally is viewed as important, aligning support to external priorities so that it is relevant and progressive is also imperative in its development and sustainability. In an environment where resources may be limited across institutions, consideration is given to approaches that may assist in using resources most effectively. Online resources are identified as a potential avenue to maximise staff time. Links between institutions can facilitate collaboration in accessing and sharing opportunities and resources. Most importantly, a strong case for early career researcher support and an understanding of institutional needs in this area can be presented to funding bodies as an integral part of building research capacity.

A number of recommendations are made in this report, drawing on the lessons learnt from African institutions and external funders in developing early career researchers. These aim to build and sustain structures and processes that can effectively and holistically support early career researchers in their development. These recommendations are presented as a framework through which institutions may reflect on their own research provision and what is appropriate in their particular context.

Knowing and shaping your context
- Defining who to target as an early career researcher in the context of institutional and local needs
- Reviewing existing approaches and identifying gaps
- Linking early career researcher development and institutional priorities
- Linking early career researcher development and external priorities

Establishing institutional structures and resources
- Staff dedicated to early career researcher development
- Ongoing professional development of support staff for researcher development
- A clear framework for career progression
- Recognising early career researcher development in staff review and promotion criteria
- A strategy for the monitoring and evaluation of researcher support, with early career researchers defined within this
- Developing or adapting tools to facilitate the monitoring of career objectives

Priorities for researcher support
- Embedding mentoring into the institutional culture
- Time out for researcher development
- Training in hard and soft skills

Making the most of limited resources
- Using MOOCs and blended learning
- Developing networks and centres of excellence to pool resources, share support and skills, and facilitate mobility for early career researchers
- Incorporating early career researcher support into funding proposals

1. Introduction

The role of universities as 'central institutions of the 21st-century knowledge economies'[1] in Africa will be key in moving from an 'invention and production economy…into an innovation and competitive economy'.[2] Student intake is rising in the higher education sector, with numbers projected to reach 18-20 million by the end of 2015.[3] If, however, African universities are to become more effective research institutions and to collaborate globally with leading research institutions and researchers, they will need to increase both the quality and the quantity of their higher education outputs.

Altbach and Salmi cite the following factors as crucial to developing world-class research institutions, able to compete and collaborate within international HE:
a.   A high concentration of talent (faculty members and students)
b.   Abundant resources to offer a rich learning environment and to conduct advanced research
c.   Favourable governance features that encourage leadership, strategic vision, innovation, and flexibility and that enable institutions to make decisions and manage resources without being encumbered by bureaucracy[4]

All of these factors are constrained, to a greater or lesser degree, in many African universities. However, it is arguably the first of these over which universities themselves can exercise the greatest control, independent of external factors beyond their influence.

Early career research development is a growing and increasingly recognised priority for universities internationally, including in the UK. Nowhere is this more urgent than in Africa, where higher education provision is expanding and diversifying at a tremendous rate. Yet current investment in the HE sector at the national level is still viewed as being largely concentrated on student numbers, rather than on the quality of research and teaching staff needed for outputs of high impact.[5] Though there has long been a commitment from African countries to spend at least 1% of GDP on research and development, the sector at present still suffers from a chronic shortage of funds across the continent, with investment currently amounting to less than 0.5% of the continent's GDP,[6] in contrast to an average investment of 1.6% of GDP in tertiary education alone among OECD countries.[7] At the same time, student enrolment in tertiary education has almost doubled in sub-Saharan Africa, from 3.6 million in 2003 to 6.6 million in 2013 – an average annual growth rate of 6%.[8] Even in countries where a higher proportion of funding for HE has been allocated, such as Kenya and South Africa, this provision is still falling short of meeting growing demand.[9]

Not only is student enrolment growing apace, a proliferation of new universities is emerging. In Nigeria, for example, the number of universities has more than trebled in the last 15 years, rising from 41 at the start of 2000 to 138 in 2015.[10] It is no great surprise, therefore, that the National Universities Commission in Nigeria now reports an acute shortage of academic staff.[11] Even in the continent's leading institutions, the supply of academic staff – in particular, PhD-qualified, research-active staff – is not keeping pace with this growth.[12] Many African governments have set targets for increasing the proportion of academic staff with PhDs. In 2009, for example, the National Universities Commission, Nigeria, set a target that within three years all university staff should hold a doctorate. While this target proved impossible to meet, it did incentivise universities to accelerate the training of staff.[13] Where governments have begun to put in place stricter quality assurance measures, increasing numbers of African institutions have begun to require their staff to hold a PhD. This has driven the demand to complete doctorates, but placed further pressure on the system.

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1   *The Road to Academic Excellence: The Making of World-Class Research Universities*, ed. by Philip G. Altbach and Jamil Salmi (Washington, DC: The International Bank for Reconstruction and Development/World Bank, 2011), p.2

2   TrustAfrica and Mail & Guardian Africa, *Graduating in Africa* (Senegal: TrustAfrica and Mail & Guardian Africa, 2015a), p.4

3   Ibid.

4   Altbach and Salmi (eds.), p.3

5   TrustAfrica, 'Revitalizing Higher Education for Africa's Future, 10-12 March 2015, Dakar, Senegal: Concept Paper' (2015b)

6   TrustAfrica (2015b)

7   OECD, *Education at a Glance 2014: OECD Indicators* (OECD Publishing, 2014), p.223

8   UNESCO Institute of Statistics – Enrolment in tertiary education, all programmes, both sexes (number)

9   TrustAfrica and Mail & Guardian Africa (2015a)

10   National Universities Commission (Nigeria)

11   Tunde Fatunde, 'Investigation of public universities uncovers problems', *University World News* (16 March 2013)

12   Ian Bunting, Nico Cloete, and François van Schalkwyk, *An Empirical Overview of Eight Flagship Universities in Africa: 2001-2011* (Cape Town: Centre for Higher Education Transformation, 2014)

13   Tunde Fatunde, 'Nigeria: Urgent need for more academics with PhDs', *University World News* (11 December 2011)

While measures have been taken to improve the quality of teaching staff within some state HE systems, the demand for higher education and the current limits in provision from public universities have led to an increase in private universities, the majority of which are cherry-picking the most lucrative and profitable courses – often those cheapest to deliver – rather than focusing on research or responding to the needs of the labour market.[14] Furthermore, it was noted at the workshop held to contribute to this report that private institutions often prefer staff with Master's, rather than doctoral, qualifications because they are cheaper to employ, further limiting the quality of teaching likely to be available. It was also noted that comparatively few private universities train academic staff, recruiting instead from the public sector – a 'double-edged sword' that simultaneously increases the burden on the public sector and undermines its capability. The growth of the private sector may also be diverting research interests away from context-relevant needs-led research towards external interests, and will make regulating the quality of HE provision even more difficult.[15]

Lack of regional capacity in the research sector, Mouton argues, has further exacerbated the challenge of brain drain. There is much support for the concept of 'brain circulation', where networks built with international research institutions, through scholarships for example, support increased capacity as researchers return to their country of origin. However, Mouton contends that, unless the research capacity of the institutions to which they return is sufficiently high, it is unlikely that the returning researchers will be able to 'give something back'.[16] As the high ratio of Master's to doctoral staff seen in many institutions suggests,[17] too few individuals with postgraduate degrees are seeking to progress their research careers in academia. Moreover, of those that do secure an academic post, the representation of women and other minority groups is well below average. For example, male academic and research staff make up 70% of the staff profile in southern African institutions, excluding South Africa.[18] This has ramifications not only for the individual but also for the sector as a whole and its ability to attract and retain a highly-skilled, qualified, and diverse workforce.

This has created a catch-22 situation: restricted resources to fund cutting-edge research and limited investment in staff capacity have meant that many of the best and brightest have left the sector, leading to poorer teaching and lower standards of graduates and newly qualified staff,[19] unable to build their skills and capabilities through insufficient support systems.[20] This means that the majority of African institutions are hugely constrained in producing high-quality research outputs and successfully bidding for competitive research funding, generating publications, and having impact within the global HE environment.[21]

> *A review of the southern African higher education sector published by the Southern African Regional Universities Association (SARUA) makes the following recommendation: 'Growth in the regional higher education sector brings with it the concomitant demand for qualified and experienced staff. This poses one of the biggest challenges for institutional and national policy-makers. To deliver quality outputs, higher education institutions face a tremendous challenge in recruiting, developing, renewing and retaining capable human resources. Dedicated attention and innovative strategies are required to address this critical need in each country, taking cognizance of opportunities that can be harnessed through regional and international collaboration.'*[22]

While a doctorate, or in many cases a Master's degree, is the prerequisite for holding an academic post, these qualifications represent just the point of departure for a successful academic career. Creating and sustaining a dynamic and productive research culture remains an elusive goal for many institutions on the continent, whose academics lack the opportunities and support to build and develop their research profile and output.

The issue of acute staff shortages emphasises the pressing need to increase postgraduate, and especially doctoral, training provision in Africa. Indeed, the theme of training the next generation of academics has been a major focus over the past decade or more for a wide range of donors, spearheaded by the Partnership for Higher Education in Africa. Leading African institutions have been at the forefront of many excellent initiatives, and governments in countries such as Kenya, Nigeria, and South Africa are now prioritising PhD production as integral components of their national development targets. There are signs that these efforts are beginning to bear fruit, with enrolment in doctoral programmes in sub-Saharan Africa growing at a faster pace, albeit from a low base, than undergraduate and Master's level enrolment – rising from 25,221 in 2001 to 66,352 in 2011, an average of 10.2% growth per year.[23]

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14 Altbach and Salmi (eds.)

15 Altbach and Salmi (eds.)

16 Johann Mouton, 'The state of social science in sub-Saharan Africa', in *World Social Science Report 2010: Knowledge Divides* (Paris: UNESCO/ISSC, 2010)

17 Bunting et al.

18 *A Profile of Higher Education In Southern Africa, Volume 2: National Perspectives,* ed. by Piyushi Kotecha, Merridy Wilson-Strydom, and Samuel N. Fongwa (Johannesburg: SARUA, 2012), p.26

19 Mouton

20 TrustAfrica and Mail & Guardian Africa (2015a)

21 Altbach and Salmi (eds.)

22 Kotecha et al. (eds.)

23 UNESCO Institute of Statistics – ISCED level 8 compared with ISCED levels 6 and 7

Several areas of focus are emerging that are important to consider in the development of institutional frameworks to support early career researchers. First, given the constrained funding environment, it is important to consider how the HE sector can make the most of limited resources. This is not an issue confined to Africa, but it is particularly acute in the region, notwithstanding considerable variations in institutional experience. Second, in terms of international support, it is important to consider how, under these conditions, the outcomes of any interventions can be sustained and have impact in the long term. Finally, and linked strongly to the first point, it is therefore important to consider where the focus of support should be for initiatives seeking to address the shortfall in human resources, if African higher education provision (through teaching, research, and public engagement) is to serve the needs of the continent and engage and collaborate with international best practice. Many African universities do not have any formal policies or frameworks for researcher development support, let alone any guidance on meeting the specific needs of those early in their careers. It is therefore important to consider how existing mechanisms can be strengthened and developed.

Africa has seen a rise in the number of national research agencies across the continent with the aim of increasing the quality and consistency of African higher education, as well as an increase in programmes seeking to support intra-continental mobility – such as the African Union Nyerere Programme and the African Higher Education Harmonization and Tuning Project. Linked to these developments, a number of frameworks are being proposed or established that would allow researchers to move more smoothly between institutions on the continent. Such frameworks would also establish standards for quality that would encourage institutions to review their systems and practices as they benchmark themselves against others. Debate is underway as to how these frameworks should be established, what they should encompass, and what can be learnt from other models applied elsewhere. For example, Mohamedbhai proposes that lessons can be learnt from the Bologna Process in establishing the European Higher Education Area. However, he also emphasises the importance of assessing experiences in Europe with consideration of their applicability to the African context.[24] Early career researcher support, as a key contributing factor in the production of high-quality research, should be integral to these debates. A similar process of reflection on reviews of early career researcher support to date and the applicability of international standards may similarly be useful for African institutions to consider in establishing their own priorities in this respect.

1.1   Taking the Nairobi Process forward

This report forms part of the Nairobi Process, an ongoing programme exploring approaches to, and promoting dialogue around, Africa-UK research collaboration and strengthening support systems for researchers in African higher education institutions. In particular, it builds on a strand of discussion, initiated in *The Nairobi Report* and developed further in the later *Foundations for the Future* report, which concentrated on where international collaboration and support should focus. The reports linked the rising number of students now accessing higher education and the support systems needed to foster a new generation of academics with the skills and capacities to be both mentors to future academics as well as research leaders in their field.

The first Nairobi Process report focused on strengthening research in the humanities and social sciences, and Africa-UK research collaboration in particular.[25] Alongside governance issues and the importance of networks and partnerships, the development of early career researchers emerged as an area of focus 'sufficiently critical to warrant subsequent exploration'.[26] The report also highlighted the importance of recognising the heterogeneity of African institutions. It acknowledged that any programme working to strengthen research systems would first need to evaluate what was in place institutionally and nationally, and work closely with each university to explore what would be appropriate in that particular context. Following on from this, the *Foundations for the Future* report went further, proposing how external programmes could be designed to strengthen early career researcher support.

24   Goolam Mohamedbhai, *Towards an African Higher Education and Research Space (AHERS): A Summary Report* (Abidjan: Association for the Development of Education in Africa, 2013), p.44

25   Jonathan Harle, *The Nairobi Report: Frameworks for Africa-UK Research Collaboration in the Social Sciences and Humanities* (London: British Academy/The Association of Commonwealth Universities, 2009)

26   Jonathan Harle, *Foundations for the Future: Supporting the early careers of African researchers* (London: British Academy/The Association of Commonwealth Universities, 2011), p.1

The Nairobi Process has, to date, highlighted the need to reconsider and prioritise processes for developing institutional frameworks for early career researchers. While there is still little dialogue regarding early career researchers specifically, and still fewer examples of university policies on this, there is growing recognition of the link between limited human capital in the African HE sector and the continent's relative lack of presence and engagement in the global higher education sector. There is increasing debate on the systems, cultures, networks, connections, and practices needed to bridge the gap between escalating student numbers and the dwindling capacity of skilled and experienced senior researchers.[27] Furthermore, in terms of international collaboration and support, there is evidence that approaches that focus on strengthening local institutions, linked to early career research development, may be more sustainable in terms of building the institutional frameworks and human capabilities involved.[28] This report captures some of the more recent debates and looks at specific initiatives seeking to address institutional capacity in supporting early career researchers.

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27 TrustAfrica (2015b)

28 Norwegian Centre for International Cooperation in Education (SIU), *The Norwegian Programme for Development, Research and Education: Final Report* (Bergen: SIU, 2013)

2. Methodology

Nairobi Process reports	CIRCLE and STARS programmes developed at the ACU Feedback on early career researcher support taken from programme surveys Interviews with representatives of institutions with more developed programmes of support for early career researchers	African HE sector developments relevant to early career researcher support Other programmes focusing on early career researcher support Literature review and meetings with programme representatives

Background paper discussed at a workshop in May 2015 with representatives present from a range of institutions

Draft report sent for peer review, July 2015

Final report

The findings and recommendations of the first two reports within the Nairobi Process were the point of departure for this report, which focuses more closely on the lessons that can be drawn from existing practice within African institutions and international programmes supporting early career researchers in sub-Saharan Africa. In particular, this report draws on two Africa-based initiatives currently underway that have integrated the findings of the first two reports into their design and objectives, and which offer instructive insights into the dual focus on individual development and institutional frameworks.

The Climate Impacts Research Capacity and Leadership Enhancement (CIRCLE) programme and the Structured Training for African Researchers (STARS) programme both seek to provide research support for individual early career researchers, while at the same time working closely with their institutions to strengthen their strategic and practical support for researchers. CIRCLE emphasises the importance of supporting intra-African research links and ensuring that participating institutions learn from each other to develop their support mechanisms and nurture the talent and skills of their researchers. STARS draws on another strategy proposed in the *Foundations for the Future* report, for more distance learning support for early career researchers, which would allow a greater number to benefit from training and mentoring through online resources. Indeed, others have cited online blended learning as a key resource for the future.[29] However, both the *Foundations for the Future* report and others stress that this should not be seen as a cheaper, lighter alternative.[30] Though both CIRCLE and STARS are in their early stages, initial work with the institutions and researchers involved presented a timely opportunity to draw on their experiences and aspirations for early career researcher support.

As part of the application process for CIRCLE, 29 institutions and 34 CIRCLE Visiting Fellows (CVFs) based in sub-Saharan Africa were surveyed about support provision for early career researchers.[31] While this sample cannot be taken as representative of all African institutions, the feedback provided gives some indication of the level of provision currently available.[32] The variation within the operating contexts of the institutions, drawn from nine African countries, may also give some indication of the extent to which lessons and experiences may or may not be more widely relevant across the continent. In addition, feedback has been collected on the progress of the two programmes and the aspirations of those involved. Interviews were also conducted with several representatives of institutions that have established more integrated and comprehensive support systems: Dr Mignonne Breier at the University of Cape Town, South Africa; Dr Eme Owoaje at the University of Ibadan, Nigeria; and Professor Godwell Nhamo at the University of South Africa.

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29   Mohamedbhai

30   Ibid.

31   See Appendix A for a list of CIRCLE institutions.

32   The provision of early career support formed a part of the selection criteria, and the sample comprises largely institutions from Anglophone countries.

While it was beyond the scope of this study to implement a comprehensive review of all programmes focused on supporting early career researchers, a number of externally-funded programmes were additionally selected for review. These provide further examples of approaches to combining capacity building of both researchers and their institutions, or of programmes that have expanded the traditional remit of support – focusing on the 'harder' technical research skills – to include the 'softer' skills needed to develop a research career, secure funding, write for publication, and communicate and disseminate research effectively.

To contextualise the report and its findings, a literature review was conducted to explore some of the current debates and issues affecting African higher education. This highlighted some of the key factors affecting the provision of support for early career researchers and gave an indication of the opportunities, challenges, and limiting factors that they may present.

These various data sources were drawn together, and the initial lessons and findings from their review presented in a background paper for discussion at a workshop held in May 2015 in Johannesburg, South Africa. Participants were invited from a range of African institutions, with many of those attending representing research management offices.[33] The Johannesburg workshop provided a useful platform for feedback from experienced professionals involved in researcher development and a further opportunity for participants to share expertise and experience from their institutions. The workshop included feedback from early career researchers on their priorities, presentations from the University of Ibadan and the University of Cape Town on their researcher provision, consideration of the roles of different stakeholder groups in developing and promoting institutional frameworks for early career researchers, a presentation on international developments in researcher support, a review of initial recommendations proposed, and a discussion of key areas for consideration in future developments. The workshop produced many examples of initiatives, some of which are highlighted in this report, indicating a positive trend towards recognition of early career researcher support systems as an integral component of building human and institutional capability. Following on from the Johannesburg workshop, this report has been reviewed by the British Academy Africa Panel.

2.1   Selection of case studies and examples

It is important to note that, while this report makes a number of references to developments in provision for early career researchers in South Africa, these examples should be considered with regard to the South African context – with its unique history, highly differentiated system, and where the HE sector is, on the whole, much better resourced than the majority of other African countries. Therefore, what is possible in South Africa may not be so easily achieved or applicable in other contexts. Nonetheless, the South African examples explored here still provide important insights into the potential for early career researcher support. The funding environment in South Africa may be more favourable and institutions better positioned to provide more extensive programmes of support; however, the level of and approach to provision is still highly varied and, as in the example given of the University of Cape Town, often still largely dependent on external funding. A similar argument can be made for the examples drawn from Nigeria. Although the country may have a more favourable economic climate, funding for HE has still been heavily affected by political changes within the country. In addition, although a number of initiatives are emerging in African countries in support of researcher development,[34] there are, as yet, fewer extensive evaluations and reviews of these other initiatives readily available to draw upon. While this report presents a number of lessons learned and recommendations that are considered relevant in many contexts in Africa, their applicability will vary according to the particular opportunities and constraints present. Indeed, how researcher support systems are developed and communicated with consideration of their context is a key theme of this report.

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33 See Appendix B for a list of workshop participants and their institutions.

34 For example, the Tertiary Education Trust Fund (TETFund) in Nigeria has funded a number of projects, research grants, and scholarships in support of researcher development at public institutions in the country (*The Guardian*, 2014).

3. Existing practice in African institutions

Before exploring the potential opportunities and lessons learnt from emerging practice, this section aims to provide some indication of the current level of support for early career researchers within African institutions participating in the CIRCLE programme.[35]

Strategies and policies to support early career researchers: 24% of institutions indicated that they had a strategy or policy in place in support of early career researchers. 52% indicated that a strategy or policy was in development, and a further quarter said that they had nothing in place at all. While the proportion of institutions with a strategy in place is seemingly low, it is interesting to note that a survey of UK institutions conducted in 2013 by Vitae also found 'much reference to provision for postgraduate researchers, but less detail…around the support for research staff, for whom training and development provision was generally covered in broader staff development training programmes'.[36] A lack of focus on the specific needs of early career researchers may therefore not be particular to African institutions.

Formal researcher development programmes: 61% of institutions indicated that they had no formal researcher development programme in place, though the majority said that they had a department, office, or member of staff with responsibility for the professional development of their (academic/research) staff. In contrast, the Vitae survey cited above 'overwhelmingly demonstrated that researcher development has been fully embedded in institutional strategies, with almost two-thirds citing that researcher development was a senior level responsibility'.[37] While early career researcher support may experience a similar lack of recognition in African institutions as in other contexts, gaining support from higher up for supporting researchers more broadly may be a more significant barrier to overcome.

Satisfaction with researcher support provision: The majority (83%) of eligible applicants for the CIRCLE fellowships indicated that they were at least satisfied with researcher support at their institution, though less than half (44%) indicated that support was good or excellent.

Training provision: While the majority of researchers indicated that they were satisfied with researcher support at their institution, the majority also indicated that they urgently needed more advanced training in a number of key research skills. Areas in which the largest number of researchers indicated they had received no or little support were soft, less technical, skills, such as influencing policymakers and identifying funders and funding – an area also identified as a priority for further training. When asked about their aspirations for the fellowships, many CVFs focused on the skills associated with publication and grant writing. One fellow commented:

> *'I have relevant and useful areas to research on, but being able to write the proposal in a convincing way that can attract funding is a problem. Also the budgeting side of the proposal writing is a problem.'*

Institutional capacity to provide professional development support: Areas of provision indicated as lacking by the largest number of institutions were career planning and professional development support.

Mentoring provision: Most of the researchers indicated that they had a mentor at their institution (though this may have been affected by the conditions of the CIRCLE programme, which require all CVFs to have a mentor). However, among the institutions, only 21% stated they had a formal mentoring system in place. In most cases (57%), mentoring occurs informally and, for a fifth of institutions, there was no mentoring provision in place at all. Several institutional respondents commented on the importance of developing a more systematic approach to mentoring:

> *'[A] mentoring system should be an integral component of the staff development policy as well as students' policy to enhance the human and institutional growth of the institution.'*

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35 Within the CIRCLE programme, participating institutions and research fellows were asked to provide feedback on existing provision for early career researchers as part of the application process. Some of the findings are presented here and give a useful indication of the current level of support in 29 African institutions from nine countries – including seven ranked among the top 30 African universities, as well as others with a less established profile.

36 Vitae, *Analysis of institutional responses on funding arrangements for researcher development* (Cambridge: Careers Research and Advisory Centre, 2013), p.4

37 Ibid.

These findings indicate that, while institutions are mostly providing basic training in hard (technical) research skills, there is much less focus on developing the softer skills that researchers may need in formulating a long-term career plan or exploring professional development. At the same time, the softer skills that may strengthen their abilities to seek funding to continue their research or establish networks to increase the impact of their findings are receiving less priority. While researcher support and mentoring provision is in place in the majority of institutions, this is mostly informal in nature and not well resourced. Very few institutions had support specifically targeted at early career researchers. The lack of priority given to more holistic programmes of development may link back to pressures on the time and resources needed to invest in developing staff and to cultivate a productive and supportive research culture within the institution.

Figure 2   Obstacles to research and career progression – selected CVF responses

Figure 3   Obstacles confronting climate change researchers – institution responses
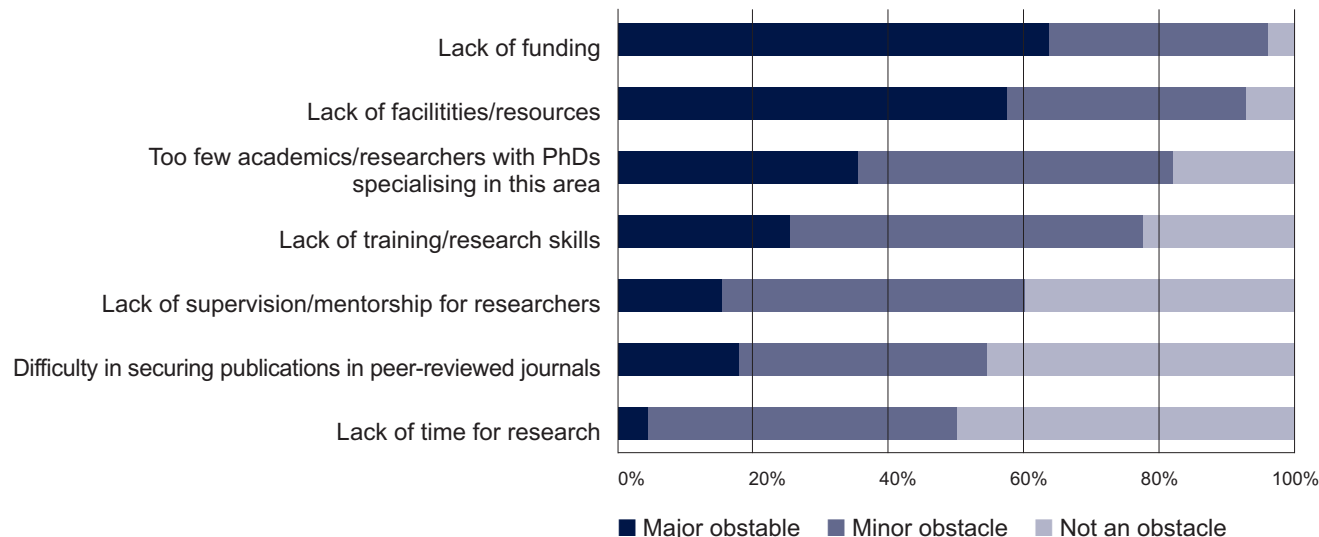
When asked to identify the key challenges in conducting research, there was considerable agreement between the responses provided by the CVFs and the institutions involved in the programme (see Figures 2 and 3). Unsurprisingly, researchers and institutions both identified funding and resource limitations as the biggest barrier, with almost all CVFs identifying funding as a major barrier to research. Other challenges identified as less significant, but barriers nonetheless, were lack of training, limited supervision, and difficulty securing publications. An unexpected result, however, was the identification of time constraints as the least limiting factor in conducting research. This appears in contrast to the previous Nairobi Process reports and other literature on the higher education sector in Africa, and may, very cautiously, be a positive sign that time for conducting research is beginning to receive greater priority, at least in some institutions. However, accounts from representatives at African institutions discussed later in this report suggest that securing the time and recognition for research within institutions can still be a considerable barrier to overcome. Furthermore, the data from CIRCLE respondents is from a limited sample and we should be mindful of the inherent bias. All responses come either from institutions that have committed to release one or more members of staff from all other duties for one year in order to focus exclusively on undertaking research, or from the individual researchers given this opportunity.

Reflecting recommendations emerging from the international debate on researcher development, both CVFs and institutions felt it was critically important to engage with other institutions and researchers, to share their skills and resources and build a profile in their field.

Both CVFs and institutional representatives mentioned the potential to develop centres of excellence. Some referred to research uptake, influencing policy, and providing guidance to the communities in which their research is located:

> '*I hope to engage the relevant policy agencies on the relevance of integrating climate change into development programmes in the host and my own country. This I would expect to [achieve] through knowledge sharing seminars with the local government agencies in the host country as well as my country… Peer-reviewed publications will make some policy impacts.*'

This feedback again reinforces the importance of providing opportunities for researchers to practice and develop communication and networking skills, alongside more technical research skills. Furthermore, the findings suggest that early career researcher support is not prioritised or distinguished in the majority of institutions, and that the systems and processes in place are largely informal. Anecdotal evidence reinforces this, with researchers and institutional representatives suggesting that, in many cases, it is the responsibility of the individual to make the time for research activities and to seek out funding, mentoring, and opportunities to disseminate their research.

4. Emerging practice in African institutions

As already acknowledged, research support provision across Africa is highly varied. Most of the institutions examined for this study indicated that they did not have a formal system in place and no specific support for early career researchers. However, interviews were conducted with representatives from three institutions that have confronted some of the barriers to support and made significant progress in establishing more comprehensive or integrated systems.

- The **University of Cape Town (UCT)**, South Africa's oldest university and one of Africa's leading teaching and research institutions, has formulated a comprehensive system of support in line with its strategic objectives.[38] Its Emerging Researcher Programme (ERP), established in 2003 to address the gap about to be left through the retirement of 'a cohort of established (mainly white and male) researchers', has managed to secure funding from a number of donors – most recently the Carnegie Corporation – to develop a holistic programme of support, including 'seminars, workshops and individual mentoring on request, provided by eminent retired or current researchers'.[39] The programme has grown considerably since it was initiated.

- The **University of Ibadan**, among Nigeria's most established and prestigious universities, has more than 80,000 postgraduate students and the demands on its research support are considerable.[40] Following the creation of a centralised research management office, the institution has developed a more coordinated system of support for researchers.

- The **University of South Africa (UNISA)**, one of the world's 'mega' universities, with over 400,000 students, adopts a less centralised approach but offers a range of initiatives to support its researchers.

The approaches vary, but all three have sought to address the issue of institutional frameworks for early career researchers in line with their contextual requirements and constraints. While these institutions are not necessarily typical of those across the continent (if such a thing as a 'typical' African university exists), there are a number of lessons that may be drawn by others seeking to develop and support frameworks for early career researchers. Here, we review some of these lessons – drawing on the interviews, the experiences of other institutions shared at the workshop, and international best practice.

4.1   Defining the 'early career researcher'

Defining who can access what type of support can make a big difference in the effect that support has. Many institutions do not distinguish early career researchers from other researchers. This may be partly due to lack of resources to be able to target particular groups of researchers. It may also be due to social norms whereby precedence has historically been given to senior, more established researchers for research and development opportunities. This adds weight to the case for a more embedded approach that can initiate a culture shift at the institutional level. This would require changes – endorsed at a senior level – to ensure that staff, and the systems that underpin their development, recognise the importance of supporting the next generation of research leaders. Defining who should receive this support and why it is important for them to receive it is, therefore, an important factor in ensuring that junior researchers and senior management are willing and able to invest their limited time and resources to developing staff capabilities.

Of the representatives interviewed, two gave a definition of an early career researcher at their institution. A third definition is used within the CIRCLE programme, and participants in the Johannesburg workshop also highlighted different elements of their institutions' own criteria, where these exist. These definitions variously combine one or more of a range of criteria, none of which is without complications.

Age: At the University of South Africa, early career researchers are defined as those under the age of 35. Using an age restriction can be problematic, however, as it may exclude those who have taken a career break (for example, to start a family) or come into academia later in life. Another university present at the workshop, and which also applies an upper age restriction in its definition, acknowledged this drawback but justifies the restriction on the basis of the limited resources available for early career researcher support. Recognising that they cannot afford to provide support to all researchers who may benefit, the university chooses to prioritise support for researchers with the potential to serve the institution for a longer time over those closer to retirement. With an age-based restriction, however, it is important to be aware of any anti-discrimination laws or legislation regarding equal opportunities. If external funds are used, it is also important to explore whether this approach contravenes any funding policies or grant conditions.

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38   University of Cape Town (UCT), 'Our history'

39   UCT, *10 Years On: The Emerging Researcher Programme* (Cape Town: UCT, 2013)

40   University of Ibadan, 'A Brief History of the University'

Length of service: A similar consideration to using an age limit, some institutions or programmes apply an arbitrary cut-off for the maximum number of years that an individual has been employed within an academic post. This criterion is again used to channel scarce resources toward individuals with the greatest prospect of contributing to the profile of the institution. While avoiding the drawbacks of age restrictions mentioned above, this criterion is not without its own problems and can serve to unwittingly reinforce historical discrimination. This restriction may also be perceived as unfair by staff who have been in the system a long time but for whom such opportunities did not previously exist.

Academic qualifications: Within the CIRCLE programme, the eligibility criteria for a fellowship includes a restriction based on the length of time that has elapsed since an individual completed their PhD. This is capped at five years, but extended to seven years for researchers who have taken a career break (for example, to have children or due to an extended period of illness). This criterion makes no differentiation between staff who do not hold a terminal degree and so is often combined with one or more additional criteria. In the previous Nairobi Process reports, reference was made to postdoctoral researchers. However, it is clear that there is a large proportion of staff within African higher education institutions that are at Master's level and are often both students and researchers.

Academic rank: Another common criterion used within definitions of an early career researcher is to place an eligibility restriction based on academic rank. This will usually exclude all professors and associate professors but, depending on the academic profile of the institution and level of resources available, may also exclude senior lecturers and senior researchers. However, in some disciplines, universities report having to compete with salaries in the corporate sector, meaning promising researchers might be appointed at higher levels than would usually be the case, given their qualifications. These staff still need training in skills more commonly associated with junior staff. Similarly, staff recruited from other institutions may not have received the same level of support from their previous employer and may therefore have gaps in their skills that need to be 'backfilled'. There is also often a gender and, particularly in South Africa, a racial/ethnic imbalance that can become more pronounced at more senior levels, as those in minority groups encounter greater barriers to their career progression.

Employment status: At UCT, the Emerging Researcher Programme differentiates between the role of staff and student, and between permanent and contract staff. UCT has now started to offer small amounts of funding to contract staff who would not previously have been able to access support. As early career researchers are more likely to be employed in temporary positions as they try to build their academic career, how support and funding is accessed by staff in these roles may be an important consideration for many institutions. A number of institutions also choose to exclude visiting staff from their support provision, whereas other universities include this as a key part of the experience offered to visiting fellows.

Besides the wide variety of definitions, the very term 'early career researcher' is also called into question. At UCT, the term 'emerging researcher' is used instead and this is not tied to age, or even level within the academic system. A key aim of the Emerging Researcher Programme is to integrate new staff into the system and make them feel comfortable in their role as quickly as possible:

> *'We see our role almost as fast tracking or helping people to learn the ropes of being an academic.'*

In a similar vein, the term 'early career academic' is used in some contexts as an expanded definition encompassing the full remit of academic staff, with support to develop skills in teaching and community engagement as well as research.

While a common definition may be desirable, the advantages and disadvantages of the possible criteria that may be combined to form one suggest that individual institutions need to carefully construct their own language around what this report describes as 'early career researchers', aligning their definition with the priorities of the institution and taking into account the context in which academics (early career or otherwise), research managers, and their leaders are interacting, engaging, and cooperating.

4.2   Targeting early career researcher support in line with institutional objectives

Framing support for early career researchers as an important strategy in meeting institutional objectives was highlighted by all three institutions as key to embedding that support at their institution.

At UCT, as already noted, changing the demographic profile of their staff has been particularly important:

> *'Why do we offer early career researcher support? It's to help fill those gaps that are developing more and more in the academic workforce and particularly we are seen as playing a role in contributing towards transformation at the institution, because we are trying to reach out to as many black researchers as possible; and women – we've got a majority of women in the programme, so that's also an important feature of it.'*

By 2012, the ERP had provided support to a total of 243 black researchers – 44% of its membership.[41]

At the University of Ibadan, early career support is also viewed as a key component in driving institutional change, being the 'line of least resistance'. While it can be difficult to persuade more senior members of staff to consider new approaches to conducting research, early career researchers are more likely to welcome opportunities to develop their skills and to adopt new techniques. It is important to note that this approach would still rely on junior staff having the opportunity and support to apply these new techniques and skills once they have been trained, hence the argument for a broader culture shift at the institutional level. However, sowing the seeds of change from the bottom up, while supporting what may be a slower transition at the top, may also be an important strategy. The Nairobi Process has argued that support for early career researchers is critical to the development of a healthy and productive institutional research culture. This does not mean neglecting senior researchers, but it might involve challenging and adjusting conventions where resources and opportunities are disproportionately concentrated at senior levels, especially if this is at the expense of investing in more junior staff.

Increasing support at the University of Ibadan has come through drawing a link between the university's focus on sustaining research that is aligned with the needs of society and the need for succession planning to maintain a talented pool of researchers. It was emphasised that investing in early career researchers can be an effective mechanism for promoting change within the institution, and Dr Owoaje stressed that demonstrating this link to institutional representatives may be a method of garnering further institutional support. Furthermore, it was noted that including early career researcher support as a key element of external funding for initiatives at the university has also increased awareness of its importance.

At UNISA, too, a greater focus on developing early career researchers is linked to a broader cultural shift within the institution that prioritises research to the same levels as teaching and learning. At the Johannesburg workshop, other institutions – such as the University of Ghana – also noted similar institutional support for a transition to becoming more research intensive, with interest in strengthening researcher support in line with this. Increasing interest in becoming a competitive research institution may, therefore, present an important opportunity for making the case to invest in early career researchers.

4.3   Incentivising staff participation in professional development activities

At UCT, senior staff play a key role in delivering the ERP programme, leading many of the seminars and workshops that are run at the institution and giving invaluable tips from their experience, for example, on the importance of networking or particular areas of interest to their field. Retired professors are often invited to run these sessions, as they are felt to be more willing to share their 'trade secrets' than those still working in the competitive academic environment:

> *'Certainly people of my age and generation just didn't get that support from professors in their departments. They held these secrets close to their chests. It was almost a competitive relationship with your seniors. Initially, the idea of employing retired professors was because there couldn't be a competitive relationship. They had the time and there was nothing in it for them to withhold information.'*

Currently, the profile of those supporting the programme is largely retired academics, or those who have participated in the ERP in the past and have now gone on to senior positions.

At UNISA, the issue of resistance from senior staff to supporting those at junior level has been addressed head-on by pairing early career researchers with a mentor and by including a requirement to mentor junior staff as part of senior staff members' key performance indicators. This supports the argument for a more structural, top-level approach to embedding change. UCT is also eager to support a more systematic, devolved approach to mentoring in future, where responsibility lies at the faculty level and incentives are introduced for this to become embedded in career progression.

The involvement of senior staff at UCT seems a useful strategy in addressing the softer, less tangible skills that are often missed in researcher development training, through sharing the knowledge and experience of those who have already become established and successful researchers. However, as UNISA's example above shows, training and developing the mentoring skills of all staff, and recognising this as integral to their professional development, is also important in embedding this within the culture of the institution.

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41 UCT (2013), p.6

4.4   Developing and sustaining a more comprehensive system of support

While all interviewees mentioned provision for the development of skills, such as writing, publication and grant proposal writing, how this provision is delivered varied considerably. In addition to workshops on research skills, which are open to all academics at the institution, UNISA also offers writing workshops for publication, which enable academics to take up to a week out from their responsibilities to work on a publication at a location away from the university. In addition, there are opportunities for early career researchers to apply for fellowships to spend several months to a year visiting an institution that is identified as having research relevant to UNISA's aims. Recognising the pressures often faced by early career researchers to maintain their workload while working on additional qualifications, the Academic Qualification Improvement Programme at UNISA funds early career researchers to complete their postgraduate studies at another institution, while funding a replacement member of staff for the duration. There is support for staff who are studying while working, and financial incentives for completing a PhD. Further funding is provided on completion of a PhD for academics to present their findings at an international conference. At the same time, new talent at the postdoctoral level is attracted to the institution by competitively-financed postdoctoral grants for external academics. Awards and other forms of funding are also available for early career researchers. This level of resource and support is, however, quite exceptional for the continent. Even within South Africa, comparatively well-resourced institutions such as UCT are unable to provide this level of assistance to their staff. However, UCT does provide, in addition to its training workshops, small start-up and research development grants, which staff can use to attend conferences, complete fieldwork, or buy equipment, for example.

What all three institutions have in common are opportunities for researchers to take time out to develop particular skills, away from administrative and teaching pressures. Furthermore, and of critical importance, these opportunities often focus on the softer skills – such as building networks and connections – needed not only to produce research, but also to develop and establish themselves within their field.

Providing a comprehensive system of support for early career researchers can take a considerable investment. UCT has managed to secure a significant amount of funding from both government and international donors. However, recent insecurity in government funding has increased the pressure to continuously seek support to maintain the programme. To secure the future of the programme, UCT is considering the possibility of introducing charges for external participants. But alongside this potentially more commercial business model sits the university's commitment to support academics from historically disadvantaged institutions to access the scheme where possible.

At UCT, the programme of support for each researcher, after registering for the ERP, is currently defined through an interview at which their needs are identified and they are encouraged to develop a five-year plan, taking into account both personal and professional goals. At the University of Ibadan, monitoring of and formal recognition for professional development activities were identified as potential means to demonstrate their value to senior management within the university. UCT's Dr Breier also highlighted how monitoring progress can be an important tool in applying for and sustaining external funding.

It is clear from UCT's experience that obtaining external funding, and developing the skills to identify and secure such funding, is key to the development and maintenance of its programme. At the University of Ibadan, similarly, many of the changes that have been made at the university have been guided by support from external organisations; for example, the research management office was established through a National Institutes of Health (NIH) grant and support from the John D and Catherine T MacArthur Foundation. At UNISA, funding for early career researcher development has also been received from external sources, such as the EXARRO Chair in Business and Climate Change. While this report certainly advocates and encourages funders to support similar endeavours, there will always be a limit to the amount of external funds available, especially for smaller institutions, and to the duration for which those funds will be available. Moreover, there is a danger that such initiatives might be donor, rather than institution, led. At the University of Ibadan, for example, while researcher support is offered to all faculties, greater external investment in researcher development workshops and training in the area of behavioural and biomedical sciences, through NIH funding, may mean that provision is more extensive in this area. Funding of programmes at UNISA has also been found to be most effective where it built on existing initiatives and institutional objectives, rather than imposing external priorities. Moreover, all three universities have been affected by provision (or lack of) from government. It is therefore important to note that the political climate and government sources of funds can have a strong influence on researcher support.

Other more structural suggestions for developing sustainable support, such as decentralising some elements of researcher support and having dedicated staff to manage researcher development activities, might have more widespread applicability. In particular, the role of dedicated staff to coordinate, monitor, and champion researcher development as a core component of institutional strategy was highlighted. Moreover, it was emphasised by all of the case study institutions that greater buy-in is required from higher up in the university to formalise the systems and procedures needed for career progression and researcher development within the institution.

5. External initiatives to strengthen support for early career researchers

External funding can play an important role in developing a more comprehensive system of support for early career researchers. At the same time, it is evident that the case study institutions recognise the value of strengthening the skills of their early career researchers as a key strategy in meeting their institutional objectives. These examples therefore support the importance of external programmes that develop early career researchers as an integral part of their design. There is evidence to suggest that a dual approach – one that strengthens both researcher skills and the ability of their institutions to support them – may be most effective.[42] In contrast, programmes that have focused solely on supporting researchers to increase their research abilities, without also working with their home institutions, may face the risk of unsustainable benefits in the medium to long term. If their home institution is unable to provide sufficient mechanisms to continue their professional development after their return, researchers are more likely to leave, taking the skills that they have developed with them.

Funders supporting research in Africa are beginning to recognise the need to strengthen wider institutional support and cultivate an enabling environment in which researchers can work. However, this is still a very tentative development and programmes that integrate this holistic approach are, at best, sporadic. It is imperative to establish this focus on the agenda of funders of research in Africa if their inputs are to be sustained over the longer term and research collaboration is to flow further between Africa and other parts of the world.

5.1 Supporting fellowships/doctoral training alongside strengthening institutional frameworks

For this report, two programmes were reviewed that support researcher training alongside strengthening institutional frameworks, with slightly different approaches. The CIRCLE programme supports fellowships for early career researchers in the field of climate change to conduct a one-year research project at a different African institution, in most cases outside their home country. Alongside this, it runs an institutional strengthening programme to build institutional capacity in early career researcher support at the participating home and host institutions. The Malaria Capacity Development Consortium (MCDC) programme supports a PhD programme for researchers in the field of health sciences at African institutions, alongside strengthening the capacity of those faculties to support early career researchers.

CIRCLE has taken what might be described as a top-down approach to strengthening capacity within institutions, working with the centralised governance of the university to develop the systems needed for effective researcher development. In contrast, the MCDC programme has taken more of a bottom-up approach, developing researcher support in specific faculties, then using these as a pilot to show the value to university authorities of scaling up the initiative. In order to scale up, the MCDC is seeking to embed the programme at a higher level within the institutions.

5.2 South-south versus north-south networks and collaboration

The CIRCLE, MCDC, and the Norwegian Programme for Development, Research and Education (NUFU) programmes all contain elements of both south-south and north-south collaboration. In the case of CIRCLE and the MCDC programme, the focus is particularly on south-south networks, though the MCDC consortium includes four European universities providing support to the five African partners. CIRCLE also provides links between African research fellows and specialist advisers based internationally (see Figure 4) and draws on international expertise in directing the institutional strengthening programme. NUFU also incorporates elements of both south-south and north-south networking through its programme; though its fellowships are based outside Africa, capacity building is in-country. While expertise has been included from northern institutions, all programmes recognise the importance of building south-south networks and of strengthening local capacity as core to sustaining the benefits of the programmes.

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42   SIU (2013)

Figure 4   Diagram showing the CIRCLE programme structure
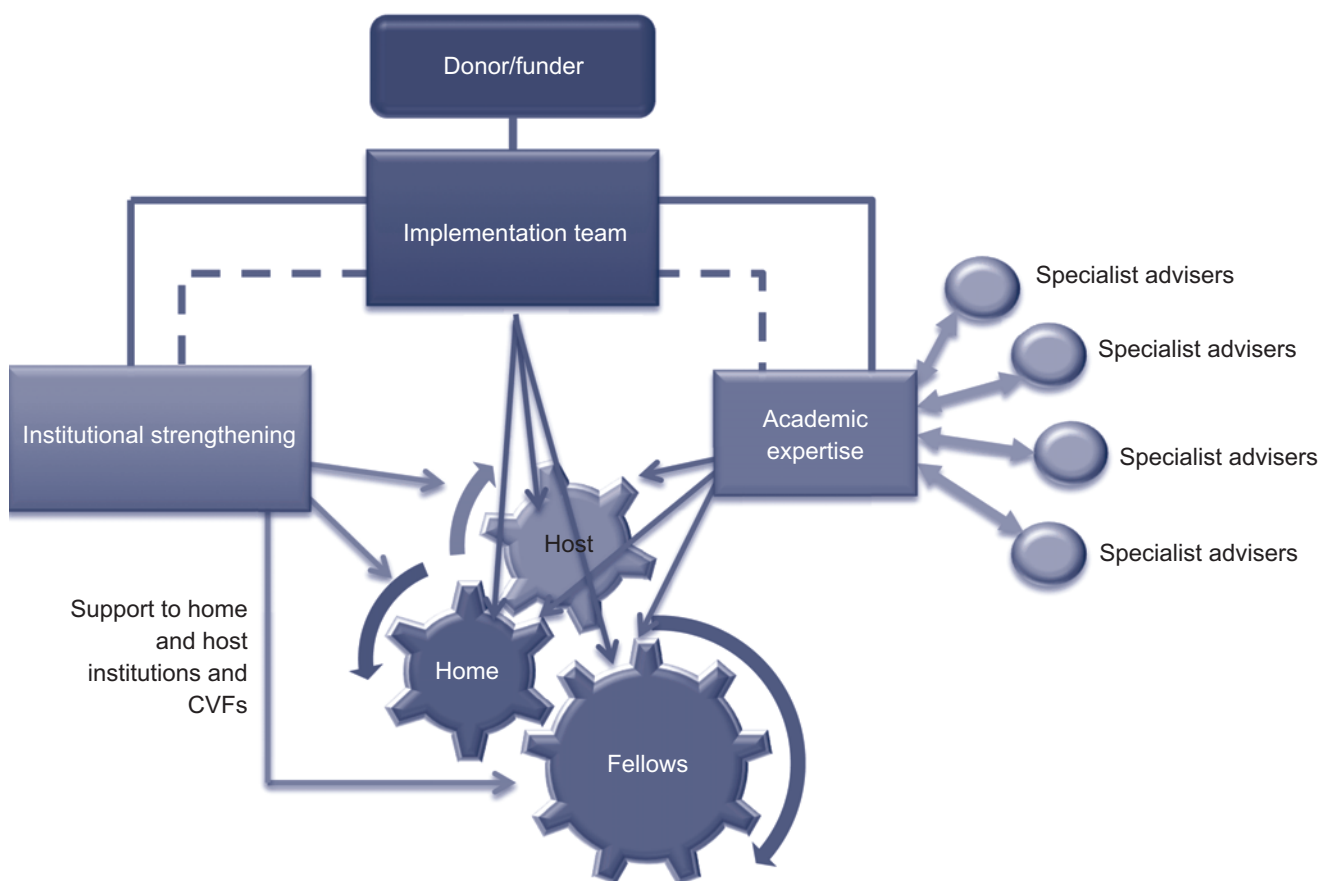
Within CIRCLE, the majority of fellowships have been supported in other African countries outside the fellows' home countries. Where fellows have been hosted in their home countries, some difficulties have been experienced, with fellows being encouraged (or expected) to continue their duties at their home institution. This highlights a significant consideration for south-south fellowships. While they present a chance to build regional networks and strengthen the capacity of both institutions and researchers, it is important that ties to the home institution do not interfere with the fellows' opportunities to develop as researchers, and that they are given the protected space to focus both on their research and their development.

5.3   Coordinating teams, mentoring, and professional development

Reflecting the feedback from Ibadan and UCT on the importance of a coordinating body, both the MCDC and CIRCLE programmes use internal teams within each university to coordinate capacity building activities. The MCDC programme has worked with health science departments to form career development groups, focusing on personal development planning, mentoring support, and postgraduate supervision. CIRCLE similarly relies on the formation of teams, but at a more central level within the institution. These teams receive a structured programme of support to help them analyse their existing provision, identify gaps in researcher support, and develop viable action plans to address those gaps. This might, for example, be in the area of strengthening or adapting their training provision for early career researchers, incentivising staff to undertake or contribute to early career researcher support initiatives, or developing an institution-wide strategic plan for early career researcher support. The key principle is that capacity strengthening is driven by the institution and institutional need, and implemented by a broad-based team, but with the guidance, experience, and perspective of external experts. Both programmes also include specific support for mentoring provision and researcher professional development planning as core elements of the programme. Focusing on these elements of researcher support reflects the priorities identified by CIRCLE institutions in needing a more formalised approach to mentoring, and the limitations in professional and career development planning mechanisms.

5.4   Holistic skills development

The feedback from CIRCLE and previous Nairobi Process reports indicates that softer skills development, in particular, may be an area of provision that is lacking in African institutions. Ensuring that research integrity and ethics are also central to any researcher support programme (both in terms of its objectives and delivery) was also given high priority by participants at the Johannesburg workshop. Other initiatives, such as the African Women in Agricultural Research and Development (AWARD) programme, have a particular focus on developing the softer skills that early career researchers need, concentrating on networking and leadership skills.[43] The AWARD programme targets its support at female researchers, recognising that they may have less access to the intangible skills needed to succeed as a research leader. Programmes such as CIRCLE and those run by MCDC and NUFU also include an explicit focus on building networks. For example, in addition to bringing researchers and institutional representatives together for online and in-person workshops, CIRCLE encourages its fellows to share their experiences and opportunities using an online forum and blog.

5.5   Managing researcher support provision

Both the CIRCLE and MCDC programmes have developed frameworks for participating institutions to conduct a baseline review of their existing provision as a basis for exploring how this can be developed. This again reinforces the importance of strengthening and expanding existing initiatives. Both programmes have used international frameworks as a basis for developing monitoring and guidance of their provision. Both have adapted Vitae's Researcher Development Framework for researchers and their managers to monitor career progression.[44] CIRCLE also uses the UK's Concordat to Support the Career Development of Researchers[45] and the European Commission's European Charter for Researchers and Code of Conduct for the Recruitment of Researchers[46] at an institutional level as a basis for institutions to review their existing provision and identify gaps to be addressed.

The introduction of tools such as these, as methods of monitoring progress and demonstrating the value of researcher support provision, may address some of the concerns highlighted by the CIRCLE institutional representatives. Reflecting the proposals made by Mohamedbhai, that there is benefit in learning from and adapting existing frameworks developed in other contexts,[47] early indications from CIRCLE suggest that these international frameworks can also be useful when adapted for use in African institutions.

5.6   Maximising support provision through blended online learning

From the interviews with CIRCLE institutions, it is apparent that a limiting factor in the level of support that these universities are able to provide is the time that support staff have available to design and deliver training for early career researchers. The earlier Nairobi Process reports, as well as recent literature,[48] highlight the potential of online resources in researcher development. The STARS project has developed, and is currently piloting, an initiative to maximise the use of staff time through a blended online and in-person training approach. This has been put into practice through the collaborative development of an online professional skills course for researchers, comprising nine modules, backed up by tutoring within their institution; and the development of an implementation tool to assist participating universities to embed the course and associated support into their own structures and systems.

STARS is guided by a few key observations and approaches:

- A virtual programme can provide additional and supplementary support, but **cannot replace a structured approach to early career development at institutional level**.

- The **emphasis is on the development of a series of high-quality courses with good facilitation and assistance to universities** to provide the necessary local support. Central to the STARS approach is the use of blended learning, through which online training is enhanced by institutional facilitation and support.

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43   African Women in Agricultural Research and Development

44   Vitae, 'Researcher Development Framework'

45   Vitae, 'The Concordat to Support the Career Development of Researchers'

46   European Commission, 'The European Charter for Researchers'

47   Mohamedbhai, p.44

48   Mohamedbhai

- STARS relies significantly on **the engagement of local coordinators** at each participating institution who enjoy the backing and support of their institutional leaders.

- **Many programmes overlook and under-acknowledge the expertise that exists within African universities, and do not adequately reflect African research contexts.** Understanding local context is critical and the STARS model specifically draws on African expertise, with all the modules designed, developed, and delivered by African academics and HE administrators. Furthermore, the project engaged a cohort of African academics to advise each of the authors on emphasis and local context.

One of the achievements of STARS reported by participants is the community that has been created during (and beyond) the online seminars. Nevertheless, despite the advantages of cost-effective scale and reach, distance learning does come with its own set of challenges. Among them are:

- **Bandwidth:** The main challenge of blended learning is working with authors and universities in areas with very low or unstable bandwidth. The strength and consistency of the internet connection at each university was measured as a matter of course during the selection process, but for some institutions there have been problems in connecting to the online seminars. The difficulties have been somewhat overcome by pre-recording presentations and inviting the author to join the discussion while their presentation is playing. While the use of pre-recorded, rather than live, presentations resolves some of the issues connected with live streaming, it does reduce the interactivity and spontaneity of the sessions.

- **Drop-out rate:** Another challenge has been a higher drop-out rate than would normally be seen with a traditional in-person course. While the content of each module is scored highly and participants are pleased with the material, there is a constant struggle with how much time they can dedicate to their learning.

- **Engaging senior management:** More than half of the project participants report that they struggle to engage senior management with professional development provision for early career academics.

STARS has the potential to enhance researcher support programmes and to maximise the use of staff time in supporting researcher development. However, while participants are engaging well with the course and the online community, underlying structural challenges at some institutions may be limiting its effectiveness. While technical challenges can be overcome, if early career researcher development is not prioritised at a senior level, it is likely to remain a challenge for researchers to justify the time required to engage fully with the programme. Moreover, without institutional support for early career researcher development, there may be a risk to the sustainability of the programme in the long term. In contrast, for those institutions that are able to support their researchers to engage fully, online learning may be a valuable resource within a broader programme of support.

6. Lessons to be drawn: developing future research talent

In May 2015, a workshop was held in Johannesburg, South Africa, to discuss the initial findings, recommendations, and areas for discussion outlined in an earlier version of this report. Many of the workshop participants were experienced professionals involved in researcher development, and provided valuable feedback. The workshop generated productive discussions around the opportunities, challenges, and considerations in providing researcher support, and many case studies and experiences were shared. This section will attempt to bring together the various sources of data from the literature review, feedback from programmes, interviews, and the workshop, to summarise some lessons drawn for the development of early career researcher support in the African context.

6.1   Identifying who to support

The concept of an early career researcher is a complex and evolving one that varies across institutions, countries, and continents, providing a lexicographic hurdle to activity in this area. Even the term 'early career', as noted above, can be problematic as it struggles to encompass the diversity of academics building – or rebuilding – a career in research. While it is important to distinguish particular support for those building their career, it may also be beneficial to have some flexibility in who can access that support, how it is defined, and what is suited to the context and staff profile of any given institution and its particular local, cultural, and historical context. It may be that, in order to target limited resources most effectively, some institutions have to focus on those at a particular age, career stage, or profile – but this will need to be carefully considered for its institutional benefits, and communicated and implemented with careful consideration of the institutional culture.

6.2   Dedicated time for researcher development

The importance of offering early career researchers opportunities (or encouraging them to make their own opportunities) to develop their research skills was reinforced during the development of this report. Participants at the Johannesburg workshop suggested that staff often have teaching responsibilities at several universities, and that early career researchers in particular can be saddled with administrative and teaching burdens passed on to them by their superiors. There can also be personal responsibilities, such as family, making it more difficult to find the time to develop soft and hard research skills.

This report outlines several approaches through which staff might be encouraged to take time to develop their research skills. Some suggest that staff should be encouraged to develop their time management skills, so that they can factor in time to conduct and publish research in addition to their other duties. This approach would put the responsibility on researchers to take charge of their own professional development. Alternatively, retreats organised by the university to allow researchers to focus on a particular research skill (for example, writing workshops), away from the institution, would give a more formalised opportunity for researchers to take some time out. Similarly, fellowships can also provide an opportunity for an extended period away to concentrate on research or to gain additional qualifications.

Retreats and fellowships were identified as most effective in ensuring that staff are able to devote enough time to developing skills away from work pressures. In particular, fellowships undertaken outside the home country are seen as a good opportunity, with a much lower risk of staff being persuaded, or expected, to return to their workload. Additional benefits associated with fellowships include the connections forged with colleagues in other institutions, the capabilities and skills that can be gained from experiencing a different research and institutional culture, and enduring relationships with other researchers – all of which serve to further enhance the development of the researcher.

6.3   Mentoring

When asked what the biggest priority is for early career researcher development, there was unanimous support at the Johannesburg workshop for mentoring. It is also a practical area of support that many institutions could implement without necessarily requiring significant additional resources. A clear conclusion emerging from this study is that mentoring is integral to an effective early career researcher development strategy. Not only is there inherent value in the mentoring of junior researchers, there is also the additional benefit of promoting collegiality and collaboration across academic levels and, perhaps indirectly, confronting some of the barriers to opportunity that emerge within a very hierarchical research culture.

Key areas of mentor support can include, but are not limited to: providing guidance on the research process; pastoral support in areas such as balancing work and personal commitments; disseminating opportunities for participation in conferences, workshops, funding applications, and so on; and the induction of new staff members. Furthermore, it was proposed at the workshop that, where possible, having several mentors – each bringing different perspectives and knowledge – can be a positive influence on the development of a researcher. Mentoring relationships developed with researchers from other institutions can also be beneficial in expanding the experience of early career researchers and in providing opportunities for future collaboration.

The findings from the review of CIRCLE institutions indicate that mentoring is often delivered informally, with the responsibility lying with early career researchers to find and approach a mentor if they want one. Currently, in the majority of institutions assessed for this report, there seems to be a disconnect between researcher support and career progression. In contrast, the integration of mentoring into staff key performance indicators (KPIs) at UNISA has been a positive incentive to give value to this activity when the time of senior staff may be limited. Above all, many comments from participants at the workshop reinforced the importance of buy-in from senior researchers and university management in prioritising researcher support that nurtures research cultures and puts in place the systems and mechanisms for its administration, monitoring, and evaluation. It is important to note that early career researchers themselves are vital links in the human capacity chain, and training in mentoring should therefore be a key component of their development to become research leaders in the future.

6.4   Supervision

While the distinction between supervision and mentoring did not arise as a topic in the interviews with institutional representatives, participation in the CIRCLE programme led to further reflection on these roles.[49] Furthermore, issues surrounding supervision emerged during the Johannesburg workshop. It is important to define and distinguish between supervisors, mentors, and their roles (and indeed a number of other related roles within institutions).[50] Where an early career researcher has more than one senior researcher advising on their professional development, it is important to clearly define who is responsible for what and where there are shared responsibilities. In general, there seems to be agreement that the role of the supervisor is to advise on a research project in order to meet a qualification, while the role of a mentor is to advise on the less tangible elements of becoming a successful researcher within their field and context. Often, however, a mentor will also advise on the research project and a supervisor may also advise on developing as a researcher. It may therefore be challenging to clearly separate these roles, but an agreement on who is responsible for what is likely to help avoid disputes.

Participants at the workshop commented that there is currently a shortage of supervisors. More experienced researchers are needed to supervise emerging researchers, but experienced supervisors are in short supply because more trained staff are required, creating an unfortunate cycle in lack of capacity. Several approaches have been proposed to bridge the gap in human capital. As a more immediate solution, supervisors could be encouraged to supervise several early career researchers. Institutions could also pool their supervisory capacity. As proposed in the MCDC programme, a database could be compiled of the research expertise of academics from several institutions, so that supervisory capacity can be shared and the best match made for the needs of early career researchers. The University of Ghana stipulates that, if a department wishes to offer a new PhD programme, it must have partnerships with other universities in order to develop a pool of researchers to be part of a supervisory team.

6.5   Prioritising research skills development

While the skills to conduct and publish research are rarely given priority within the workload of early career researchers, publications are often the basis for promotion. Several workshop participants suggested that, for someone early in their career, years can easily pass without publication due to other demands on their time – effectively putting on hold their career. Furthermore, given that most academic positions within African institutions are, essentially, jobs for life, this gives little further incentive for staff to aspire to develop their skills. Therefore, even where opportunities are created for academics to take time out to develop their research skills, there can still be challenges in the uptake of these opportunities.

A number of approaches were suggested for encouraging the uptake of professional development opportunities. Active and willing researchers could be identified to act as champions, to participate first and share their experience with others. When others see the benefits of undertaking professional development activities, then more will join. To ensure a broader shift in institutional practice, incorporating continuing professional development into reward and promotion criteria may be most effective in incentivising and motivating individuals to undertake such activities. For example, some institutions have set a minimum number of publications that researchers are expected to achieve.

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49 Joyce Maru, 'Role of "critical research friends" in mentoring emerging researchers: Reflections from a mentorship workshop', Maarifa/International Livestock Research Institute (ILRI) (27 May 2015)

50 Ibid.

A more beneficial approach may be for researchers to develop a publication plan with a supervisor, based on the research that they are undertaking. Researcher development targets could be set as part of KPIs for each level of career development (for example, the use of KPIs to encourage senior researchers to support junior researchers at UNISA). Developing a professional development plan with researchers right from the induction stage may also be a useful approach to identifying personal priorities for development and monitoring their progress. Key to the success of more integrated approaches is, therefore, investment from higher up to ensure involvement from senior members of staff in understanding and guiding the development of early career researchers.

6.6   Demonstrating the value of researcher support

There is evidence to suggest that without effective governance structures in place, researcher development will not be valued and is likely to drop in the list of priorities and obligations of early career researchers and their managers. At an institutional level, if early career researcher support is not given priority, then resources will not be invested, restricting the opportunities for development. Support will be ad hoc, inconsistent, and highly dependent on the personal drive of the individual to seek out opportunities. Critically, this may have a particularly adverse effect on those who are already marginalised within the research system, as they are less likely to have the confidence and the networks to draw upon to take advantage of personal development opportunities. Demonstrating value and ensuring buy-in at a senior level are therefore important strategic approaches if universities want to ensure continued investment, in terms of both time and resources, in developing their early career researchers.

Monitoring and evaluation of researcher development can be effective in demonstrating the value of researcher support. It can also be an important strategy in guiding researchers in their career development and attracting other researchers to develop their skills, as they see the benefits of participating. It can provide evidence of the value of developing junior staff for senior research leaders, and potentially highlights the tangible value of investing in researcher development to achieve institutional goals. It can also be used to attract funding and demonstrate effectiveness to funders, so that the support on offer can be developed and maintained. Furthermore, continuous monitoring of the needs of researchers, and how existing support is meeting these needs, can be used to review the effectiveness of the support structures in place and to explore how they may be developed to be most successful in the future.

The examples of the University of Ibadan and UCT demonstrate how a team dedicated to managing researcher development and knowledgeable of their political and institutional context can act as key advocates in prioritising early career researcher support. Emphasising the role of early career researcher development in steering the university towards a more prominent place in global university rankings can be a key argument in its favour. UCT is a good example of a university that has used the monitoring and evaluation of its programme to demonstrate its value, and as evidence to secure further funding and ensure the programme's sustainability. However, as already noted, a balance also needs to be struck between measuring outputs and focusing on the character of the researchers that institutions wish to foster. Careful consideration, therefore, needs to be given to how career progression criteria are defined, how staff and departments are trained in supporting researchers in this process, and how to foster cultures and careers outside a simple criteria matrix.

6.7   Aligning researcher support with external priorities

In the absence of sufficient support from government, several of the interviews cited in this report indicate that the establishment of formalised researcher development provision has been made possible by securing external support. This has been received in a number of different forms: as part of the funding for undertaking research projects, through direct training from an external provider, as specific funding for researcher development systems, or a combination of these approaches. The Nairobi Process, as well as the programmes discussed in this report, indicates that, though valuable, researcher support provided purely by external providers, without building internal capacity, is unlikely to be as sustainable as a more embedded approach. In the long term, we must consider what form external support for early career researcher development should take. Funding provided without consideration of existing programmes of support, both internal to the university and from external providers, are likely to be ineffective and may even have negative consequences. For example, one representative gave a case of two externally-funded programmes at their institution, one of which provided a higher stipend than the other in support of researchers with lower qualifications, causing difficulties in how these were managed. One key lesson that can be taken from the examples given in this report is that external interventions should be guided by, and aligned with, the aspirations of the institution. Furthermore, supporting the development of the structures and frameworks for researcher development that already exist within the institution may be as valuable in the long term as simply providing training in research skills, if not more so.

While it is not within the remit of this report to consider what the institutional priorities for research support should be, it is worth noting that some of the discussions at the Johannesburg workshop focused on how differing priorities can affect early career researcher support and vice versa. Several participants suggested that priorities in researcher development at their institution were aligned to areas of research identified as national priorities. Therefore, funding and opportunities for researcher development were being channelled into particular fields or areas of research, often cross-disciplinary. This focus seems in part due to influence from funders, and in part due to internal objectives to build expertise in desirable niche areas of research. This raises another question of whether universities should be directed by external factors or set the agenda themselves. For example, UCT and AWARD have targeted researcher development towards strengthening skills to tackle current gender and racial imbalances; though the former has formed this objective internally, the latter is an externally-led programme. If universities are driven too much by external forces, as in the case of many researchers and institutions being drawn to more lucrative and prestigious consultancy activities and externally-funded research projects and courses, this could diminish the role of the university as a site of exploration and innovation. This is a wider, longstanding area of debate within the global HE sector; however, it is nonetheless worth noting how an institution's political and strategic priorities can impact where investment in human resources, and in developing research leaders for the future, will be directed.

6.8   Pooling and maximising resources

Another recurring theme within this report has been opportunities for maximising and pooling resources for researcher support. Collaboration has been cited as a way of enhancing often overburdened researcher support in a number of ways, including fellowships for researchers; combined retreats; centres of excellence in particular fields, particularly multidisciplinary fields; shared seed funding for talented researchers in particular fields; and shared supervisory capacity. In addition, a number of strategies for maximising resources within institutions have been highlighted. For example, the integration of MOOCs to supplement researcher support programmes, and engaging senior or retired alumni to impart their experiences as valuable insights into the less tangible elements of becoming a successful researcher.

In order to support better mobility and collaboration, institutional approaches to the cultures, definitions, and mechanisms linked to implementing, administering, monitoring, evaluating, and developing early career researcher support need to be explored. A review of existing researcher development schemes and programmes, and the frameworks and approaches they have applied, could form a useful basis for reviewing initiatives internally, as well for the development of a cross-institutional strategy for supporting early career researchers, which could see a more effective use of shared resources.

Early career researchers are key actors in the development of effective research institutions. It is, therefore, vital to strengthen their support if institutions aspire to the goal of producing high-quality research. However, the evidence presented in this report also suggests that building a comprehensive researcher development programme requires significant investment, with even more established institutions such as UCT seeking additional funding to support their researcher support programme. At a policy level, therefore, decisions need to be made about whether to focus this investment in fewer research intensive institutions or provide more widespread access to development opportunities among researchers. Invariably, a differentiated approach is required; but there might be options, if resources are more targeted, to ensure that support is extended to less well-resourced institutions, to test whether a collaborative, cross-institutional approach to researcher support would be more broadly effective at raising research standards.

7. Recommendations

This report has highlighted a number of lessons that can be learnt from African institutions and external funders in developing the broad and complex skillsets that early career researchers need in order to become research leaders, while also strengthening institutional capacity to support them in developing these skills. The following recommendations are presented as guidance for the implementation and fostering of effective institutional frameworks, support systems, and research cultures. It is not intended to be a prescriptive list, as some of the recommendations may be more or less relevant and feasible to different institutional and local contexts. The recommendations may be used by institutions to explore their own provision and how it could be strengthened. They are also designed to be relevant for funders seeking to examine how their programmes could incorporate institutional strengthening to better support early career researchers.

7.1   Knowing and shaping your context

In order to implement an effective early career researcher development strategy, the following is recommended:

- An understanding that **the term 'early career researcher' needs to be locally derived** and suit the needs of the given institution and its particular institutional, political, and cultural context, with the term 'emerging researcher' sometimes preferred.

- A **review of existing approaches** in support of early career researchers, looking at current and past early career researchers, their present and expected future needs, and to what degree these are being met by current provision.

- The formation of **a clear case for the link between early career researcher development and institutional priorities**, which takes into account the need to engage institutional leaders and the institution's and the researchers' political and cultural context.

- Consideration of **how researcher development links to external priorities** for the development of the institution and its research focus locally, nationally, and internationally, in higher education and other relevant sectors.

7.2   Establishing institutional structures and resources

Once the needs and priorities of early career researchers have been framed in relation to the external priorities of existing and potential investors and their links to relevant sectors, these can be used to prioritise the implementation of early career researcher development strategies using the following methods:

- **Staff dedicated** to the design, monitoring, and guidance of early career support, in line with institutional and national priorities.

- **Professional development for research support staff**, so that those setting up systems, strategies, and programmes for researcher support have the necessary skills and understanding to develop effective programmes. This could include such areas as gap analysis, the development of strategic priorities, and pedagogical approaches to professional development, as well as identifying and applying for external funding to establish institutional programmes for researcher development.

- **A clear framework for career progression**, so that early career researchers understand the key areas on which they should focus for their professional development, to guide monitoring of their progress, and to incentivise more senior researchers to support early career researchers as an integral part of their own development. Progress should be defined not just by publication output, but also by the quality of research and publications, and their communication and relevance to internal and external, local, national, and international audiences.

- **Recognition of contributions to researcher development in staff review and promotion criteria** using formal mechanisms, such as KPIs, to recognise staff who undertake professional development, as well as faculty who provide and support the professional development of their colleagues. Institutions should strive to cultivate a culture of support, collaboration, shared learning, and collegiality using both informal and formal structures for staff assessment.

- **A strategy for the monitoring and evaluation of researcher support, with early career researchers defined within this**, based on feedback from staff at different levels of career progression. Such a strategy should cover monitoring, evaluating, reviewing and updating researcher support systems and include early career researchers as a subset with particular development needs and priorities, and should be used to target support effectively and to design, monitor, and develop the researcher support system, as well as to collect evidence on its value and future direction for current and future investors.

- **Tools for monitoring career objectives**, encompassing both hard and soft skills, for researchers and their mentors to develop a career plan and monitor its progress. Feedback from this process may be used to tailor training and opportunities to the identified needs of researchers. Evidence of staff progress may be used to demonstrate the value of professional development activities.

7.3   Priorities for researcher support

- **Embedding mentoring into the institutional culture:** Mentoring should be recognised and incorporated into institutional and departmental strategies, as part of staff career progression and departmental objectives. Staff should be trained and guidance provided on the skills necessary to mentor effectively. Early career researchers should be matched appropriately with more senior researchers; institutions may consider whether this is through early career researchers identifying their preferred mentor themselves, or through a matching process, but in either case a database of staff profiles may be useful. Senior researchers should be encouraged to include early career researchers in the development of projects, proposals, and publications.

- **Time away from other responsibilities:** Opportunities should be provided to devote time to develop as a researcher and to expand research expertise and skills, as well as facilitating opportunities to network and collaborate with other researchers. These could take the form of workshops or training events outside the university, where researchers can focus on skills development. Alternatively, such opportunities could involve attending or presenting research at conferences and events, or allocating an extensive period of time to a particular research project. Universities may run programmes themselves, in collaboration with other institutions, or may provide grants or seed funding for researchers to take advantage of workshops, conferences, or fellowships, for example. Training in how to find and apply for grant and funding proposals and mechanisms to communicate potential opportunities can also support researchers to be active in identifying and applying for their own support.

- **Training in both hard and soft skills:** Strengthening the technical skills to produce research, as well as the softer skills required to develop as an effective researcher. These could be skills workshops, or seminars or presentations at which senior researchers are invited to share their experiences or staff are encouraged to discuss their achievements or challenges. These would also help to develop the networks and connections that will support researchers' career development and ability to collaborate locally, regionally, and internationally.

7.4   Making the most of limited resources

A number of examples of maximising existing resources are explored in the report. While not exhaustive, the recommendations below provide some ideas for potential opportunities. A more extensive review of current practice and a platform for institutions to share their experiences could create further opportunities to explore and develop innovative approaches.

- Integrating the use of **MOOCs** into researcher training through blended learning can minimise the human resources needed to support researcher training programmes, while still ensuring training is relevant to the context.

- **Networks and centres of excellence** can be used as sources of greater collaboration and catalysts for developing and cultivating shared good practice, by linking institutions and departments around common research priorities. They can also support mobility for early career researchers, allow expertise and experiences to be shared among researchers, and cater for niche research skills. By their nature, networks and centres of excellence pool resources for training and skills development, but establishing and maintaining them requires funding, administration, and long-term commitment.

- Once an institution can present a clear understanding of the needs of their researchers, the benefits of existing provision, and the opportunities for further development or particular areas of need, there should then be scope to **incorporate early career researcher support into funding proposals**, as a key element of developing institutional strength.

8. Conclusions

Ultimately, in a climate where resources are limited, the key determinant of support and investment in early career researchers will be the research culture fostered at an institution and the level of strategic priority given to research quality and output. If senior management and research leaders do not recognise the critical value of fostering talented researchers at an early stage in their career, it is unlikely that the necessary investments and decisions will be made. In many African institutions, there are at least informal mechanisms through which more assertive researchers can build their careers. While there needs to be individual agency in professional development and career progression, failure to provide a consistent level of support to researchers in developing the skills to realise that agency will create a very uneven playing field and leave untapped the full potential of the entire body of research staff. Moreover, a highly individualistic attitude to career progression is likely to constrain collaboration and peer support, and possibly affect the retention of the most able staff. If researchers feel no particular ties to their institution or do not believe that the support or opportunities exist to meet their career development goals, they are more likely to look elsewhere for those opportunities. Furthermore, a culture that favours the individual entrepreneur over widely accessible support may inadvertently limit the diversity and innovation of the institution, as there is less incentive for collaboration or peer support, particularly limiting the opportunities for more marginalised groups.

Developing a strategy to understand and respond to the needs of early career researchers, in the context of institutional objectives, and incorporating that into career development systems may be vital to promoting a more inclusive and collegial academic culture from the outset, as well as sustainably building the human capacity of the institution for the future. While this report focuses particularly on developing the skills needed to become an effective researcher, these should sit alongside, and not in isolation from, the other roles and responsibilities that a researcher may have and the broader capabilities that they will need to meet the competing demands on their time. The priority given to developing skills for research, teaching, and service should reflect the balance granted to these in the institutional strategy.

It is important to stress that completing a baseline review of existing provision at an institution and exploring how this could be developed need not take considerable resources or time. It may be a case of asking departments to report on how their researchers are supported, or holding a meeting with departmental representatives to discuss how researcher support is managed and possible gaps in meeting the needs of researchers to develop in their careers. Involving managers at the departmental level, as well as senior researchers at an early stage, could also increase engagement across institutional levels and help devolve responsibility for monitoring provision within departments. Similarly, recognising and encouraging researchers to take responsibility for their own professional development – and providing them with the incentives, skills, and tools to do so – can be seen as part of the skillset required to become a more effective researcher, while also ensuring that support can be targeted most effectively to their needs.

Exploring existing tools and frameworks may help in examining how support for researchers could be addressed more holistically. Examining existing provision and identifying gaps is a critical step in developing an effective strategic plan for researcher support. A plan that presents a strategy for how researchers could be supported more effectively or how particular needs could be better addressed can be a useful tool for making funding proposals to further develop and sustain researcher support systems.

Opportunities to take time out to develop the skills and networks needed to become a more effective researcher are presented as important mechanisms in developing researchers more broadly. However, it has also been stressed that mentoring should be seen as the crucial backbone of support for early career researchers. Therefore, how researchers access this mentoring support, the quality and training of the mentors, and the time allocated for mentoring should be given attention in all institutions. Arguably, if researchers are not receiving enough or the right support from their peers, addressing this could be a cost-effective way to improve the research culture considerably.

Funds are limited for many institutions, and establishing a comprehensive system where none previously existed will be a long and iterative process. However, while a more extensive system of support may require substantial investment, the findings of this report indicate that identifying institutional champions – and giving them the skills and tools needed to examine existing provision and making a plan for how this could be developed, scaled up, and embedded into career progression – may be an important first step. When an institution is often dependent on external actors to maintain the development of a researcher support system, demonstrating the value of these interventions becomes particularly important. To make a convincing case, dedicated champions and administrators who understand the strategic objectives of the institution and the needs of researchers – and those of early career researchers in particular – are needed. To develop, sustain, adapt, and make a case for further development of a researcher support system, effective monitoring and evaluation procedures can be incorporated into staff professional development and institutional review mechanisms to ensure the programme meets these needs and is sustainable. Finally, to ensure that the system is most effective, it should be integrated into reward and promotion criteria, engage senior staff as well as early career researchers in its development and as key contributors to its implementation,

and include training for the staff responsible for its implementation. In addition to ensuring that the support provided is targeted and employed most effectively to maximise the resources available, we have suggested a number of approaches that could be implemented.

This report has not set out to provide a comprehensive review of early career researcher support. As with the preceding reports in the series, it endeavours to contribute to and stimulate debate around researcher development. It looks more closely at practical approaches that have been adopted and lessons that can be learned from them. Through the findings of a review of various sources and discussions, a number of recommendations are made for developing early career researcher support systems. These recommendations have been formulated in consideration of how early career researcher development strategies can take greater prominence in the African higher education sector, while reflecting on how researcher support systems can be established, sustained, and most effective, given the context of restricted resources and competing priorities.

As has been found to be true in many cases where a cultural shift is needed, the key to the success of a programme of support, beyond ad hoc and informal arrangements, is in gaining approval from those in strategic positions, within both institutions and external funders. In order to obtain and manage investment, a case must be made, and validated, for the importance of early career researcher support. This report adds further testimony to the value of collaboration, discussion, and debate in formulating a common understanding and shared set of principles at various levels, and highlights the need for increasing awareness of the different options available in developing a strategy for early career researcher support. It is hoped that the continuing discussion around the reports produced as part of this series will add further stimulus to this debate.

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Appendix 1
CIRCLE institutions

Country	Institution
Ethiopia	Addis Ababa University
	Ethiopian Institute of Agricultural Research
	Hawassa University
	Mekelle University
	Organization for Social Science Research in Eastern and Southern Africa
	Wollo University
Ghana	Kwame Nkrumah University of Science and Technology
	University for Development Studies
	University of Energy and Natural Resources
	University of Ghana
Kenya	Embu University College
	International Livestock Research Institute
	United Nations Environment Programme
	University of Nairobi
Nigeria	Ebonyi State University
	Federal University of Agriculture, Abeokuta
	Ladoke Akintola University of Technology
	Michael Okpara University of Agriculture
	Obafemi Awolowo University
	University of Ibadan
	University of Port Harcourt
South Africa	University of Cape Town
	University of Fort Hare
	University of South Africa
Sudan	University of Kordofan
Tanzania	Muhimbili University of Health and Allied Sciences
	University of Dar es Salaam
Uganda	Makerere University
Zimbabwe	Chinhoyi University of Technology

Appendix 2
Johannesburg workshop participants

Participants at the British Academy/ACU workshop on 'Assessing research support for early career academics in Africa' held on 15 May 2015 in Johannesburg, South Africa.

Name	Job title	Institution	Country
Dr Tshiamo Motshegwa	Researcher/Lecturer	University of Botswana	Botswana
Dr Truphena Mukuna	Director of Research and Capacity Building	Organization for Social Science Research in Eastern and Southern Africa	Ethiopia
Professor William Oduro	Dean, International Programmes Office	Kwame Nkrumah University of Science and Technology	Ghana
Ms Esther Ekua Amoako	CIRCLE Visiting Fellow	University for Development Studies	Ghana
Dr Ama de-Graft Aikins	Associate Professor	University of Ghana	Ghana
Ms Empi Baryeh	Assistant Registrar	University of Ghana	Ghana
Dr Benjamin Gyampoh	Programme Officer	African Academy of Sciences	Kenya
Ms Joyce Maru	Capacity Development Officer	International Livestock Research Institute	Kenya
Ms Beatrix Gacho	HR Organisational Development Manager	World Agroforestry Centre	Kenya
Dr Mpho Liphoto	Lecturer	National University of Lesotho	Lesotho
Ms Sano Evelyn Kasamale	Project Coordinator	Southern African Consortium for Research Excellence	Malawi
Ms Temwa Msiska	Programme Manager	Southern African Consortium for Research Excellence	Malawi
Ms Celia Maliwichi-Nyirenda	Director	University of Malawi	Malawi
Professor Emilia Nhalevilo	Director	Universidade Pedagógica	Mozambique
Professor Happiness Oselebe	Director, Biotech Centre	Ebonyi State University	Nigeria
Dr Eme Owoaje	Director, Research Management Office	University of Ibadan	Nigeria
Ms Takatso Semenya	Research Office Manager	Sefako Makgatho Health Sciences University	South Africa
Dr Siyavuya Bulani	Senior Liaison Officer	South African Academy of Science	South Africa
Professor Johan Groenewald	Coordinator: Strategic Initiatives	Stellenbosch Institute for Advanced Study	South Africa
Dr Mignonne Breier	Research Development Manager	University of Cape Town	South Africa

Name	Job title	Institution	Country
Dr Yolande Harley	Health Sciences Research Enterprise Manager	University of Cape Town	South Africa
Dr Gaelle Ramon	Research Coordinator	University of Cape Town	South Africa
Dr Mamamelela Matlhako	Director of Postgraduate Studies	University of Fort Hare	South Africa
Dr Thembinkosi Mabila	Research Developer	University of Limpopo	South Africa
Professor Chaya Herman	Associate Professor	University of Pretoria	South Africa
Dr Patricia Smit	Head of Research Support	University of Pretoria	South Africa
Dr Bartholomew Aleke	CIRCLE Visiting Fellow	University of South Africa	South Africa
Mr Ayanda Noma	Director	University of South Africa	South Africa
Mr Katleho Nyaile	Assistant Officer	University of the Free State	South Africa
Dr Elphinah Nomabandla Cishe	Acting Director – Research	Walter Sisulu University	South Africa
Dr Doreen Mloka	Lecturer and Deputy Director of Continuing Education and Professional Development	Muhimbili University of Health and Allied Sciences	Tanzania
Ms Stella Kakeeto	Grants and Contracts Administrator	Makerere University School of Public Health	Uganda
Professor Pamela Mbabazi	Deputy Vice-Chancellor	Mbarara University of Science and Technology	Uganda
Dr Andy Cherry	Senior Science Officer	The Association of Commonwealth Universities	United Kingdom
Dr John Kirkland	Deputy Secretary General	The Association of Commonwealth Universities	United Kingdom
Mr Ben Prasadam-Halls	Director of Programmes	The Association of Commonwealth Universities	United Kingdom
Ms Evelina Vardanyan	Programmes Officer	The Association of Commonwealth Universities	United Kingdom
Ms Freya Whitehead	Project Officer	The Association of Commonwealth Universities	United Kingdom
Ms Natasha Bevan	Head of International	British Academy	United Kingdom
Professor Graham Furniss	Chair, Africa Area Panel	British Academy	United Kingdom
Mr Philip Lewis	International Policy Adviser	British Academy	United Kingdom
Dr Hazel McCullough	Professional Development and Educational Advisor	London School of Hygiene and Tropical Medicine	United Kingdom
Ms Alison Mitchell	Director of Development	Vitae	United Kingdom
Dr Nomalanga Hamadziripi	Director of the Teaching and Learning Unit	Chinhoyi University of Technology	Zimbabwe
Dr Yoheshkumar Naik	Director	National University of Science and Technology	Zimbabwe