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Wellcome Trust Project Report

Scoping Work on Research Management in LMICs

Sub-Saharan Africa

31 January 2017

www.yourconsort.com
hello@yourconsort.com
@consortstrategy

Executive Summary

1. We were commissioned by the Wellcome Trust to review the current state of research management in Africa and India (India reported on separately); and to assess the scope of past and current support by international funders. **We recommend developing a programme for *Professionalising Research and Innovation Management in Africa* (PRIMA)**, designed to strengthen research by enhancing individual research management expertise, developing peer support networks, creating communities of practice and defining career pathways. 20-30 institutions will participate, incorporating 100-200 Research Management Fellowships. A PRIMA *Concept Note* is attached as **Annex A**.

2. This is a moment of significant investment and leadership in Africa, reflected in the establishment of AESA; the investments of many funders and the coordinating efforts of ESSENCE; the creation of the Coalition for Research Innovation; and continued economic growth across Africa. The ambition is to transform the leadership, governance and funding of African research, so that African nations take ownership of and set their own research agendas, with African research working equitably with global partners.

3. Research management is a core component of the African research ecosystem and there is an opportunity for the Wellcome Trust to engage an alliance of African science leaders and international funders, combining resources and expertise to deliver an innovative, collaborative and progressive approach to strengthening research management. PRIMA will contribute to that ambition and place research management at the heart of research support systems in Africa, strengthening research and innovation across the continent.

4. The lack of specialist research management threatens the delivery, integrity and quality of research. It is no longer appropriate for researchers to be tasked with research management. They need to be supported by specialists whose expertise supports the delivery and business of research.

5. There is a no agreed definition of research management in Africa. It must be broader than simply good grant management. We suggest four functional areas that, if strengthened, will make a difference:

   - Finding Funding;
   - Developing Proposals;
   - Financial Management; and
   - Research Uptake & Innovation.

6. There is a talent pool from which to develop skilled and professional research managers and there is huge appetite for professional development amongst institution administrators but the lack of opportunities for training and career progression are a barrier to recruitment and retention.

7. The treatment of overheads remains confusing and contentious. Funders should seek to align their policies on the use of overheads for research management. They should find palatable ways of supporting both research *and* the business of doing research, which should include explicit conditions of grant that direct the appropriate use of overheads to pay for project and portfolio research management.

8. Using fragmented project-based funding for research management leads to institutional pockets of expertise and the constant risk of losing internal research management skills and project memory. This destabilizes the research environment and threatens the sustainability of institutional research portfolios.

9. The lack of widespread and professional research management threatens the integrity and sustainability of research, but the solution is eminently achievable: we simply need to bring about the progressive circumstances which are favourable to the development of effective research management: developing the right people in the right places.

Recommendations

1. We recommend developing a programme for *Professionalising Research and Innovation Management in Africa* (PRIMA), based on the principle of personal development leading to increased institutional resilience, and ultimately over time to the consolidation of sectoral research capacity. To that end the emphasis should be on enhancing personal skillsets, developing peer support networks, creating professional communities of practice, and defining career pathways for non-academic specialists. We recommend that any long-term programme of support be simple and straightforward: The research environment is cluttered with deficient research strategies, fragmented research policies and competing donor priorities. We do not want to add to the confusion but instead recommend developing a programme that builds on and supplements many of the sectors' previous activities. The programme must be readily understood, easily recognised and clearly valued. A PRIMA *Concept Note* is attached as **Annex A**.

2. A coordinated programme must be a collaborative effort. A plethora of pan-African initiatives and cross-border activities have been delivered over the last 15 years, and whilst there have been some jointly-funded bilateral ventures, there have been very few authentic multi-partner undertakings. Research management is a core component of the African research ecosystem and there is an opportunity for the Wellcome Trust to engage an alliance of African science leaders and international funders, combining resources and expertise to deliver an innovative and progressive approach to strengthening research management. That this is important and widely acknowledged is demonstrated by the outcomes of the consultation on research ecosystems at the Grand Challenges meeting in London in October 2016.

3. Clarity is required on the understanding of "research management". A variety of interpretations pervade the sector, all equating primarily to good grant management but for any long-term collaborative programme to succeed, we recommend that the Wellcome Trust works with its partners, institutions, and individuals to collectively agree the definition, which must then be widely promoted.

4. We recommend that the Wellcome Trust addresses the confusion relating to overheads and works with its global partners to align support for research management, finding palatable ways of supporting both research and the business of doing research. We recommend that this includes explicit grant conditions that direct the appropriate use of overheads to pay for project and portfolio research management.

5. We recommend that the Wellcome Trust develops an implementation plan for strengthening research management. We also recommend that concurrently the Wellcome Trust engages with potential programme partners, stewarding relationships with a view to securing financial commitments for a collaborative initiative with a target start date of Q4 2016-17, i.e. September 2017.

6. To provide momentum we suggest a consultation with partners in April 2017, a specific session at the DELTAS annual meeting in July 2017, and a conference in the autumn for research manager networks and their "champions".

Definition: Research Management

Developing and sustaining an institutional research portfolio is not straightforward and the landscape in which research grants and contracts are secured is competitive and global. Researchers are no longer able to manage all aspects of research programmes or funding, nor is it the best use of their skills or time. They need expert support. Organisations that are successful in securing funding must fulfil a myriad of obligations and consequently the role of the research office and the responsibilities and expertise of research managers must match this breadth. In short, research management embraces anything that research offices can do to maximise the growth and impact of the research portfolio.

To benchmark research management in Sub Saharan Africa we must agree our collective understanding of research management. Early discussions with colleagues from UK funding bodies[1] logically suggested an emphasis on and understanding of research management as equating to good grant management. As a profession, however research management comprises many core components, all of which exist to support effective financial management but also to enhance and sustain the research endeavour. Research management encompasses the wide-ranging administrative functions that act as enablers of research: We recommend a focus on:

1. Finding Funding;
2. Developing Proposals;
3. Financial Management; and
4. Research Uptake and Innovation.

These are the principal areas of research management which extend across the research project lifecycle. Focusing on these four priority areas of knowledge and expertise will result in individuals and institutions automatically addressing research *Sustainability* and *Legal and Regulatory Requirements*, which encompass the cross-cutting areas of activity that are integral to each of the four priority areas.

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[1] UK Collaborative on Development Sciences *Research Management Systems* workshop, London, 26 July 2016

FINDING FUNDING

• Horizon scanning for funding opportunities
     o Maintaining expert knowledge about national and international funder priorities and calls
     o Maintaining specialist knowledge about institutional priorities, researcher expertise and their career stage
     o Disseminating information to researchers in an efficient and timely manner

DEVELOPING PROPOSALS

• Understanding funder terms and conditions
 • Presenting the science as a cohesive, fundable grant proposal
 • Planning for research execution, impact and uptake
 • Pre-award financial management (developing a project plan, costing, pricing and submitting funding proposals)
 • Research development and facilitation
     o Helping to build new collaborations and communities
     o Understanding and supporting interdisciplinary research, cross-sectoral partnerships, and industry engagement

FINANCIAL MANAGEMENT
• Drafting, negotiating and accepting contracts   • Post-award project finance   • Employing staff on research contracts   • Reporting to funders   • Supporting audit, compliance and risk management   • Making statutory returns

RESEARCH UPTAKE AND INNOVATION

• Collating data, measuring and articulating research impact (uptake)
 • Knowledge exchange and business development
     o Commercialisation, social enterprise and new business support
     o Intellectual Property
 • Consultancy
 • Technology transfer
 • Supporting researcher CPD
     o Enterprise skills and entrepreneurship
 • Public engagement
     o Marketing and science communications

SUSTAINABILITY

• Developing research strategy and policy
     o Institutional, Regional and/or International
 • Training and capacity building
     o Postgraduate development
     o Supporting fellowships
     o Doctoral training
     o Administrator and manager training
 • Institutional research portfolio management
 • Management information systems and KPIs
 • Networking and relationship management
     o Collaborators, funders, government, industry, competitors, professional RMAs, etc
 • Organising, structuring and managing a research support service
 • Alternate sources of research funding
     o Fundraising
     o Philanthropic giving

LEGAL AND REGULATORY REQUIREMENTS

• Developing and/or contributing to research policy and strategy
     o Open Access
     o Data management
 • Supporting research integrity and monitoring compliance
     o Governance, ethics, good practice, misconduct, animal welfare, clinical trials, etc

Research Management in Sub Saharan Africa

World-class, pioneering research is underway across Sub-Saharan Africa but it is set against a cluttered backdrop of deficient research strategies, fragmented research policies and competing donor priorities. There is quite rightly an emphasis on strengthening capacity through researcher development and as such strong, cohesive funding and training programmes are in place to support both early-career and established investigators. Underpinned by the inestimable support of global research funders, dynamic researcher networks are emerging, which are cultivating innovative interdisciplinarity and inventive cross-border collaborations. Yet, to date, researchers receive relatively little specialist administrative or project management support for their research. Within the context of a research ecosystem that is supported overwhelmingly by external finance, researchers across the continent deal with the daily challenge of working within a complex, multi-faceted setting which includes, but is not limited to them having to: find funding; prepare proposals; respond to and align their research with funder and/or national priorities; address reporting requirements; measure and demonstrate uptake; manage data; manage people; procure equipment; negotiate with customs; organise budgets; manage finance; ensure compliance with regulation; and oversee ethical control. And *then* they do their research.

The *business* of doing research is all-encompassing and as African-led science leadership has developed, so too have the complexities of the research environment, to the point where a lack of credible specialist research management threatens the integrity and quality of research. At the Institut Pasteur de Dakar for example, the PI leading the virology laboratory attested to routinely spending upwards of 80% of his working week on routine administration, working evenings and weekends to carry out his research. This is not uncommon and across the continent we have heard similar testimony from PIs, their research teams and institution administrators.

It is no longer appropriate for researchers solely to be tasked with research management: generally, they are neither adequately skilled or necessarily interested in administration. They should instead concentrate on what they do best, and be supported by specialists whose expertise is uniquely designed to enhance the quality and sustainability of their research by improving the quality and consistency of research management and administration.

To date, the general approach to developing research management has been piecemeal, largely implemented by partners working in relatively few locations or addressing specific elements of the research support system. There are beacons of good practice, such as the University of Ghana's Office of Research Innovation and Development (ORID) and the Research Support Centre at the University of Malawi's College of Medicine, but whilst some initiatives have produced models of excellence, none are widely replicated and it is accepted that a general lack of institutional and/or donor support for specialised research management undermines researchers' endeavours and precludes the development of sustainable research capacity across LMICs. Indeed, whilst the Wellcome Trust's £30 million investment through the African Institutions Initiative (2009-14) continues to yield meaningful returns with regards to broadening the research base for African-led science and strengthening researcher capacity, RAND Europe's evaluation[2] of the Initiative found that further investment in research management is required: there is still a need for a wide-scale effort in identifying the skills gaps across research management and in establishing a mechanism for identifying and coordinating access to training, professional networks, and sustainable capacity strengthening.

To that end, enhancing research management is a major priority of the Wellcome Trust's DELTAS investment, and investment in *Research Ecosystems in Africa and Asia.* The emphasis should be on supporting researchers by investing in the development of non-academic specialists, defining their career pathways, enhancing personal skillsets, developing peer support networks, creating communities of practice, and improving institutions' management systems and processes.

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[2] G. Cochrane et al, *The African Institutions Initiative: Insights from the First Four Years* (RAND Europe & the Open University: 2014)

Dependencies

The long-term success of professional research management in Sub Saharan Africa requires resolution of several barriers to change, ranging from inconsistent views of research management to a general lack of national or local research strategies. The following fundamental concerns should be addressed as part of the development of effective and sustainable research management.

Understanding and Promotion of Research Management
There is a widespread lack of understanding of research management. There are significant examples of good research project administration across Africa but the emphasis, understandably is on good grant management and thus far we have seen few examples of the maturation of research management beyond financial stewardship. There is generally a lack of understanding about what we mean by "research management". For example, the University of Ghana's ORID maintains an exceptional grant management team but is not yet however a fully-fledged research management office. ORID covers all functions of pre-award grant management, but does little in terms of research development, such as facilitating interdisciplinarity or cross-institutional research, enhancing public engagement and communications, expediting IP or licensing issues. Other institutions have the research management infrastructure in place but do not necessarily recognize the expertise as specific to research but rather as simply underpinning the organisation's wider activities. So, for example the Institut Pasteur de Dakar offers support to its PIs via departments for Informatics, Metrology, Quality Management, Supply Chain Logistics, Maintenance and Transport but does not refer to support staff as research managers and administrators, although they nonetheless fulfil some of the research management function. Agreeing and promoting a shared understanding of the profession amongst individuals, institutions and funders will therefore be pivotal to strengthening research management capacity. This includes demonstrating the value of research management to *all* relevant stakeholders, including PIs and their research teams, institution senior management teams, and donor organisations.

Career Development
There is a considerable talent pool for developing research management across Sub Saharan Africa but the prior lack of widespread and consistently focused support for research management has resulted in limited development of individual skills and diminutive growth of any recognised profession. There is understandably an emphasis on strengthening capacity through researcher development and as such, strong, cohesive funding and training programmes are in place to support both early-career and established investigators, provided through initiatives such as DELTAS, DRUSSA and AESA. Career paths for academics tend to be better defined than those for non-academic professionals, even though the emphasis is still heavily placed on progression through publication rather than through research uptake and societal impact and/or benefit. The apparent lack of opportunities for career progression within management and administration is a significant barrier to recruiting and retaining specialist research support. This is exacerbated by the lack of training and development opportunities for non-academics, despite there being huge appetite amongst administrative staff for professional development and for the creation and/or expansion of formal peer networks and professional communities of practice. Capitalising on this enthusiasm and commitment will be one of the major keys to strengthening research systems in Africa. Whilst a shared understanding of research management is important, the development of individual specialist expertise is foremost in ensuring wider, long-term sector capacity for sustainable research.

Overheads
The treatment of overheads remains particularly confusing and contentious: There is a general lack of awareness amongst PIs and their institutions as to what constitutes research management (see above) and so inevitably they fail to include some or any research management costs in their budgets. Where the function is understood, there is still confusion as to whether research manager salaries can be treated as direct or indirect costs, or indeed whether they can be included at all, and so these costs are sometimes ignored or simply excluded from budget forecasts. This lack of clarity is exacerbated by funders' contradictory policies on what are direct or indirect and allowable or non-allowable costs.

Where funders do explicitly support research management costs, circumstances sometimes undermine the prospects of developing institutions' wider research support capacity: whilst funds are available for project-specific staffing requirements, they are not routinely offered to support management of the wider research portfolio, i.e. the variety of roles that enable the complete research lifecycle. So, where 100% costs for a dedicated Finance Manager will be paid from a project's budget, a PI will struggle to secure costs for a Communications Manager or a research uptake specialist. This is partly due to the misconception that research management equates to grant management, but also because there is no universally understood and accepted formula for calculating full economic costs (fEC). In this scenario, a Communications Manager's time may equate to a relatively small amount of the project's budget but the lack of a fEC model makes it inordinately cumbersome to calculate costs and thus funding for these critical research management roles is neglected.

Most disconcerting is that some institutions choose *not* to invest in centrally contracted research management positions. For example, Makerere University charges a 15% overhead to all research projects for central administrative, estates and utility costs, and yet no money is channelled back to pay for staff in the College of Medical Sciences' Research Support Office, where nearly 50 pre- and post-award positions are funded via project income. This leaves the College constantly exposed to the risk of losing internal expertise and project memory, which in turn systematically destabilises the College's research environment.

Using fragmented project-based funding for research management capacity building does not foster the creation of or nurture the development of sustainable research offices. Instead we witness the organic growth of precarious systems and untenable teams, such as at Makerere University, Université Cheikh Anta Diop de Dakar and the Ugandan Virus Research Institute. Many funders argue reasonably that it is the responsibility of national governments and the role of institutions to ensure appropriate management and operational infrastructure is in place to conduct research. That utopian view is challenged by the reality of research and/or research management simply not being valued by many institutions, particularly where their governments fail to recognise the value of research in supporting the development of national economies. Funders should therefore seek to align their policies on support for research management and find palatable ways of supporting both research and the business of doing research, which should include explicit conditions of grant that direct the appropriate use of overheads to pay for project and portfolio research management.

Research Strategy and Management Information Systems
All institutions express their vision to be active and recognized internationally. Indeed, both Makerere University and the University of Ghana point to their improved standing on the *Times Higher Education World University Rankings* and the *Academic Ranking of World Universities* (the "Shanghai Ranking") as indicators of their increased performance and as testimony to their investments in research management. Most institutions however do not have a formal and/or accessible research strategy and generally lack policies and/or guidelines to inform the implementation of a formal or informal research strategy. Makerere University is the exception, having published its 5-year *Research Agenda* in 2013. Consequently, managing a cohesive research portfolio is a near impossible task, one that is made worse by the general lack of research information management systems: Very few institutions have an effective electronic management system in place, making it difficult to know exactly how many projects are active and to track their progress. It also means that figures for research income across an institution are not readily available, although here the University of Ghana is the exception, having put in place stringent processes for efficient information management. Some institutions, such as Stellenbosch University are abandoning their off-the-shelf systems because they are no longer fit-for-purpose, and are instead reverting to legacy systems which, whilst old and limited in functionality, are still more responsive to African institutions' requirements. This suggests the need for a data management system that is relevant to the African research environment and not simply versions of existing systems that were developed for the US or UK markets.

Conclusions

The problems that permeate the sector and hinder the development of research management are commonplace across Africa, preceded by a general lack of appreciation for the benefits of professional research management. Administration is often viewed by senior management teams and researchers as an expensive luxury rather than a prerequisite for supporting research quality and realising project potential and efficiencies. This in turn leads to the misdirection of resources, whereby researchers use their time for administration rather than research. Where specialist research management is valued, team development is impeded by multifarious funding rules concerning overheads and fEC, which leads to fragmented investment using project-based monies, and the persistent risk of staff dismissal. The combined effect is that there are few career prospects for professional research managers, which leads to recruitment and retention issues, all of which is exacerbated by a general lack of individual knowledge, experience or expertise in research management.

The lack of credible specialist research management threatens the integrity and quality of research but the solution is eminently achievable: we simply need to bring about the progressive circumstances which are favourable to the development of effective research management: senior management buy-in and researcher engagement are essential but so too is funder commitment, not just in terms of financial support but also in relation to promoting a shared vision of effective research management, one which encapsulates both financial and non-financial activities. Finally, the promotion of professional standards is crucial and should be underpinned by provision of comprehensive professional development and networking opportunities. Delivering a coordinated and sustained programme of cross-border activities, designed to increase awareness and promote the value of research management, improve individual capabilities, enhance institutional resilience, and professionalise specialist research support will place research management at the very heart of the research support system and will undoubtedly contribute to delivery of the Wellcome Trust's wider strategic priority of *Strengthening Research Systems in Africa and Asia*.

Our comprehensive report on our scoping work on research management in Sub Saharan Africa and India is available on request.

Andrew Chamberlain   Marie Garnett
Managing Director   Principal Consultant
andrew.chamberlain@yourconsort.com   marie.l.garnett@gmail.com

Consort Strategy Ltd
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CONCEPT NOTE

PRIMA: a programme for
Professionalising Research and Innovation Management in Africa
(2017 – 2021)

INTRODUCTION
Led by the *Alliance for Accelerating Excellence in Science in Africa* (AESA) and working with 20-30 priority institutions from across Africa (including the 11 DELTAS host institutions), the programme for *Professionalising Research and Innovation Management in Africa* (PRIMA) will be designed to strengthen individual capacity and enhance institutional resilience, and is intended as a vehicle for raising awareness and promoting the value of specialist research support.

Dependent upon an institution's baseline position, the focus of PRIMA will be on either capacity building or capacity strengthening, and the amount of support offered to an institution or individual will vary, determined by their specific circumstances, i.e. support will not be shared equally amongst participants. Regardless of an institution's starting point, each participating institution will nominate 5-10 individuals to join PRIMA as cohorts of Research Management Fellows, working together through the programme and as a natural peer support network.

STRUCTURE
PRIMA comprises four core modules, which will build on several successful models for supporting the development of research management across the continent, including the ACU's *Research Management Process-Benchmarking Programme*, the Carnegie-funded *CAPREx* initiative, the NIH *MEPI* programme, AESA's *Good Financial Grant Practice* project, the *CARTA* scheme, SARIMA's *Professional Competency Framework*, and the *Science Granting Council Initiative*.

1. Institution Research Management Benchmarking
Using the institutional components of the *PRIMA Capacity Matrix* as the baseline indicator, we appraise and establish institutions' existing capacity and capabilities for delivering professional research support. That baseline assessment informs the development of an institution action plan, which in turn informs all activities, outputs, and required resources to strengthen institutional research management capacity. Throughout the programme, using the same benchmarking technique, we return annually to measure and report progress against the institution's action plan. Critically, providing we identify and use the appropriate KPIs, we can quickly create a record of impact. Key to success however is senior management buy-in and accountability. To that end, institutions should only participate if the senior management team: a) understands the value of the endeavour; b) agrees to participate as an institution, rather than as separate faculty, colleges or departments; c) agrees to commit some internal resources to supporting PRIMA; and d) agrees to be held accountable for their institution's progress. Part of PRIMA will include support for and awareness raising amongst senior management, such as training on strategy and policy development, and study tours to partner institutions in the north.

2. Research Management Fellowship
100 to 200 individuals will benefit as RM Fellows, enhancing their personal skillsets and developing their peer support networks. The Fellowships will also be used to create professional communities of practice, and to define career pathways of non-academic specialists. Using the individual elements of the *PRIMA Capacity Matrix* as a baseline indicator, we will work with participants to establish their personal aptitude and development needs, and to create a personal development plan. This plan will be cross-referenced with their institution's plan, ensuring that the institution provides a supportive environment for individual development, whilst the individual works to support institutional objectives.

The *Fellowship* curriculum will be delivered through a range of activities:

- Individual and group exchange visits with host institutions in South Africa, USA, Canada, UK, Europe and Australia;
- Group study tours to South Africa, USA, Canada, UK, Europe, and Australia;
- Formal classroom-based training and provision of online-learning;
- 1-2-1 support from a national or international professional mentor;
- An annual conference of RM Fellows, regular networking events and provision of online forums; and
- The opportunity for formal professional recognition via SARIMA's accreditation programme.

3. Online portal of shared resources

Provision of an open access online repository of shared resources will serve as a means for individuals and institutions to share their good and best practice in research management. It will also provide a portal for funders and/or project partners to share their best practice guidance. Resources might include links to technical information or products, copies of papers on current issues, practical "how-to" guides, policy summaries or statements, template forms or documents, or case studies on success (and failures) in developing professional research support. Key to the success of the portal is that it is open access: whilst participant institutions and their RM Fellows benefit from dedicated programme activity, this portal will act as shop window for PRIMA, generating wider interest, contributing much-needed learning material to the professions' collective knowledge and hopefully growing the community of practice.

4. Commissioning a common research information management system

Most institutions do not have a formal and/or accessible research strategy and generally lack policies and/or guidelines to inform the implementation of a formal or informal research strategy. Managing a comprehensive research portfolio is therefore a near impossible task, one that is made worse by the general lack of research information management systems: Very few institutions have an effective [electronic] management system in place, making it difficult to know exactly how many projects are active and to track their progress. There is scope to capitalise on collective buying power and to work with a specialist supplier to devise and deliver a research information management system that all institutions can adopt, thus working towards the same standard in terms of information management and reporting. We recommend collaborating with Citrix and adapting their *Podio* project management software.[3]

[END]

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[3] https://podio.com/