

**RIMIAC**

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on Research Management  
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# **Strengthening the mechanisms of competitive research funding and peer review in Africa**

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RIMI4AC stands for the Improvement of Research and Innovation Management Capacity in Africa and the Caribbean for the Successful Stimulation and Dissemination of Research Results.

The RIMI4AC project ran from 2009 to 2013, and aimed to strengthen the two research and innovation management associations in southern and West Africa, SARIMA and WARIMA, while supporting the establishment of similar associations in Central Africa, East Africa, and the Caribbean, namely, CARIMA, EARIMA and CabRIMA.

In the process, the RIMI4AC project provided training to members of the regional associations, and established an information and communications network, including customised websites that provide resources and support for research managers and administrators.

This document is one of a series of five papers published on themes related to research management practice, provision and development in Africa and the Caribbean. For a list of the other papers in the series, see the back cover of this document.

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## Summary

This paper forms part of the European Commission-funded RIMI4AC project. The project focusses on institutional capacity and how research management can function better to support researchers in the production and dissemination of high-quality research outputs. This paper will broaden the concept to look at how funders and grant-making bodies are also integral to the process of research production, delivery and dissemination, and boosting national and regional research capacity.

Strengthening research infrastructure and practice is widely recognised as one of the key challenges facing African universities and the establishment of robust, transparent, accountable and trusted mechanisms to fund research must be a critical consideration in any debate around strengthening research capacity. Although the spread of competitive funding mechanisms underpinned by peer review has been driven by arguments centred on quality and fairness, implementation comes with a wide set of challenges, which are especially acute where research communities are relatively small and the culture of peer review is not firmly established.

The paper focusses on the following areas:

- **Trends toward competitive funding** – During the 1980s and 1990s a significant number of OECD countries experienced a two- or three-fold increase in the proportion of research funding allocated competitively. This trend is now spreading to emerging economies with funding agencies looking to either expand or create systems for the competitive allocation of research funds. While precise figures are not available for most African countries, there is growing evidence to suggest that there is a concerted move in this direction. This movement is driven as much by influential donor bodies, such as the World Bank, the Wellcome Trust and the Partnership for Higher Education in Africa (PHEA) as it is by government policy. Confronted by these trends, African countries are faced with the challenge of strengthening (and in many cases building from scratch) their grant management capabilities to accommodate and facilitate competition. The discussion here will critically consider the rationale underpinning competitive research funding and the associated costs, as well as some of the systemic requirements for the accountable and effective distribution of funds.
- **Current practice in peer review** – Competitive research funding is, in most cases, contingent on a trusted system of peer review. The ability of funding bodies to draw on a sufficiently wide pool of experienced and independent experts and develop the administrative capabilities necessary to manage a competitive system are challenges that face any funding body. Within an African context, where national research communities tend to be relatively small and closely networked, where funding is limited and where cultures of peer review and the expectation that it forms part of the academic's role are less established, the challenges are particularly acute. This paper looks at the areas of consensus around good practice in peer-review systems and against these benchmarks considers some of the challenges that are most profound in African countries – most notably limited numbers of willing and able peer reviewers – with the aim of putting forward recommendations for sourcing, incentivising and training potential peer reviewers. It also considers the implications of a number of suggestions for increasing the efficiency and effectiveness of peer-review systems.
- **Institutional roles and responsibilities** – This section examines what institutions are doing to improve their staff's ability to produce high-quality, viable research proposals and what, if any, internal processes of peer review are used to support this and to allocate institutional research funds. It

looks at such areas as how institutions vet proposals, how they engage with funding bodies, how they train their staff and what structures are in place to oversee the internal and external allocation of research grants and delivery of the funded project.

- ***Points for further discussion*** – The final section of the paper puts forward a series of issues for further discussion and future action. This includes suggestions such as:
  - greater regional and continental collaboration;
  - boosting the culture and supply of peer reviewers by training PhDs in the requirements of peer review and committing grantees to future assessments;
  - looking at good practice in training and development (within institutions, funding bodies and among researchers and peer reviewers);
  - better engagement between institutions and funding bodies;
  - improving efficiency and effectiveness;
  - looking at what higher education institutions can do to support their staff in the areas of proposal writing and project management;
  - developing core principles of peer review for Africa.

# 1. Introduction

The challenges confronting institutional research management in Africa and the Caribbean are compounded by the added pressures of an increasingly competitive funding environment. Following trends elsewhere, there is a discernible push among both public bodies and international funders to distribute research funds on a competitive basis. Peer review remains the touchstone for assessing the quality and viability of research and forms an intrinsic part of most competitive funding systems. This trend does not only apply to external funding processes; universities and other tertiary institutions are also applying the principles of competition and merit review to their internal procedures for distributing internal research funds and promoting particular faculties. While the arguments in favour of competitive funding and peer review are broadly accepted and endorsed by the academic community, the reality of introducing and maintaining well-run systems in circumstances where research communities are small and research management structures are newly established with limited resources, is problematic. The task of operating a peer review-based research funding system that is equitable, transparent, accountable, efficient and trusted under these circumstances is at best, difficult and at worst, unmanageable. Confronting this challenge from a research management perspective means not only developing the relevant skills to operate in this environment – sourcing funding, proposal writing, project management, monitoring and reporting – but also supporting the contribution of academics as peer reviewers with protected time and with recognition. For funding bodies the challenge is to develop systems that have the requisite expertise for administering the research funds, are able to draw on a pool of recognised experts to assess funding proposals, and are demonstrably independent, efficient and effective as well as having the confidence of the research community.

Whereas other topics within the broader project are focussed on aspects of research management such as intellectual property, contracts and project management, this paper examines some of the competitive research-funding schemes in operation in Africa, assessing the challenges and ways in which institutional research management could strengthen their operation. In particular, the paper focusses on the issues involved in competitive grant administration and management, as well as the challenges associated with developing robust peer-review mechanisms. Much of the focus of the broader project is on institutional capacity and how research management can function better to support researchers in the production and dissemination of high-quality research outputs. This paper expands the focus to look at how funders and grant-making processes are also integral to the process of research production, delivery and dissemination, as well as the process of strengthening national and regional research capacity.

## Outline of the paper

Section two will look at the trends toward competitive funding, followed by an assessment of the key elements of competitive systems. A fuller discussion of how peer review fits into this model and the particular challenges associated with establishing peer-review systems in African countries follows. Section four examines institutional roles and responsibilities, drawing on specific case studies of competitive funding and peer-review systems in operation in Africa. Finally the paper will set out a series of recommendations based on the learned experience of regional providers and the broader lessons emerging from the wider international context.

## 2. Funding research: operating in a more competitive environment

### International trends

The 2005 Organization for Economic Development and Co-operation (OECD) report on research management states that 'unconditional grants' are becoming a thing of the past; funding is increasingly competitively attained or performance based (OECD, 2005: 17). The principal rationale for competitive grant-giving is that greater competition will drive up quality. Moreover, competitive funds are seen as an effective way of shaping the research agenda toward a set of defined priorities, with national priorities often used as the basis for targeted competitive programmes (OECD, 2005: 24). OECD data show a clear increase in the use of competitive funds for research in member countries. To cite just a few examples, between 1981 and 2006 the proportion of competitive government funding for research increased from 11% to 33% in Australia; from 19% to 50% in the UK; from 18% to 52% in Ireland; and in New Zealand the proportion increased from 21% in 1992 to 70% in 2006 (OECD, 2009: 154–155).<sup>1</sup> While similar figures are not available for African countries, it is clear that some governments are beginning to supplement core and block grants with competitive grants – the World Bank specifically cites Ethiopia, Ghana, Mozambique and South Africa as using 'competitive funds to stimulate qualitative improvements, research, and partnerships' (World Bank, 2010: 4). In 2008 the Partnership for Higher Education in Africa (PHEA)<sup>2</sup> supported an African University Leaders' Forum. The Nigerian delegates focussed on financing and differentiation of the higher education system, with one of the main stated aims being to establish a national science foundation to provide competitive research support (PHEA, 2009: 15).

### Building capacity

International donors are the major source of support for much research activity in Africa and among this group, there is growing emphasis on the development of strong research management structures to support the participation in competitive grant-giving processes. The World Bank's *Financing Higher Education in Africa* report notes that 'experience from developing countries has shown that focussed investment in research excellence, awarded through competition and closely linked to training can provide a catalytic stimulus for quality, relevance and human capital development in S&T' (World Bank, 2010: 107). The Wellcome Trust is another example of an international funding body investing in the infrastructure and administration of grant-making, alongside its traditional role of direct grant-giving to researchers. This shift acknowledges the importance of building local capacity to initiate and manage competitive research grants. In 2004, the Wellcome Trust and the UK Department for International Development launched a joint initiative to strengthen health-research capacity in Kenya and Malawi. Emerging out of this initiative are two funding bodies, the Consortium for National Health Research (CNHR) in Kenya, and the Health Research Capacity Strengthening Initiative (HRCSI) in Malawi.

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<sup>1</sup> These figures are based on the 'direct funding' by governments which OECD defines as being for research which is, in most cases, awarded by research councils on a competitive basis using either a tender or following a competitive application process predominantly using peer-review mechanisms. This is distinct from general university funding, which gives the universities the freedom to allocate the funds as they see fit. Even here, however, the report notes that the allocation of funds has become more competitive, with institutions conducting their own internal and departmental research evaluations to determine the allocation of the general funds.

<sup>2</sup> The Partnership for Higher Education in Africa was a 10-year joint initiative by seven US philanthropic foundations to support the structural development of higher education in Africa, with grants exceeding US\$400 million. The programme came to an end in 2010.

While the seed money for these projects came from the Wellcome Trust and the UK Department for International Development, the intention is that these bodies will become a self-sustaining part of the national framework for research funding distribution. The initial investment, which in both cases was for five years (2008–2013), was for building strong research funding systems that can identify and manage quality research using peer-review mechanisms. Box 1 summarises some of the positive and negative aspects of competitive research funding.

### Box 1: Pros and cons of competitive funding

#### Pros

- Increases quality and relevance through competitive processes that seek to identify the highest quality proposals.
- Ensures that research proposals are viable (or worthy of a high risk investment) before they are funded.
- Can direct funding toward specific research priorities.
- Provides researchers with an opportunity to test their ideas among their peers.
- Is a catalyst for the development of well-run systems that are viewed as transparent and accountable.
- Is generally supported by the academic community as a more equitable way of distributing funds than the rather patrimonial systems where decision-making is concentrated in the hands of very few, often non-specialist, individuals.
- Tends to be flexible and can thus respond to changing priorities.
- Requires application processes which (especially if combined with training) can have broader systemic benefits, developing skills in the areas of proposal preparation and project management – crucial skills in a competitive environment.

#### Cons

- Can tend toward becoming conservative and unreceptive to more experimental, high risk or multi-disciplinary research.
- Creates systems that may not meet the needs of higher education sectors characterised by major differences in institutional and structural capacity, which can lead to a concentration of funds among a handful of stronger, better-resourced institutions.
- May not produce the necessary competition to drive up quality in countries with small research systems.
- May stifle collaboration (where collaboration is not actively encouraged within the designated funding scheme).
- Can require time-consuming, labour intensive and costly grant-making procedures for both the funding body and for institutions.
- Poses the challenges of identifying, recruiting and incentivising peer reviewers and ensuring the quality of their assessments (discussed in more detail in the next section) and restricting conflict of interest.

While competitive grants do not replace the need for core investment to build up basic research infrastructure and practice, they can boost research activity and capacity. However, competing for funding is expensive. In general it requires a substantial investment of time and resources to develop proposals (especially given that most will ultimately be unsuccessful) and to subsequently manage the grant, for what can be a relatively short-term injection of funds. Thus building capacity and a systematic approach to applying for, awarding, receiving and managing competitive funds is important for both funders and institutions. Effective grant-management systems are needed to maximise the capital investment in competitive grants.

A recent feasibility study for a regional research and development fund (estimated at US\$100 million for the first five years), published by the Southern African Regional Universities Association (SARUA), makes the case for a regional fund to support collaborative research across the SADC region in order to boost research capacity. Central to the scope and operation of the proposed fund is the allocation of grants on a directed and competitive, proposal-driven basis. Grants would be allocated following an expression of interest, followed by the invited submission of a detailed proposal, subject to peer-review assessment. Proposals would require participation from at least three universities (ideally from separate countries) and focus on key priority areas. In acknowledging the challenges of administering the fund from an institutional perspective, it specifically highlights the need for university structures to 'assist researchers with administrative requirements' and to allocate protected funds for overheads, as well as provide 'adequate training and support of researchers in research and project budgeting' (Kotecha, Walwyn and Pinto, 2011: 35). It tasks university administrations with the responsibility of developing a realistic and defensible overhead model as part of the project proposals. From the funders' perspective, it acknowledges that grant-making administration is a complex and specialised enterprise, with expertise and experience required in grant-management and assessment, ICT systems, financial administration, monitoring and evaluation.

## Box 2: Funders' perspective: key characteristics of a well-run system

### A well-run system might include:

- Strong, independent and transparent governance: clear distinctions between the functions of policy development and priority setting, secretariat and administrative roles, proposal evaluation and research.
- Piloting and scaling up programmes as experience develops, i.e. incremental growth.
- Qualitative and quantitative measures to track progress.
- A rigorous, independent and transparent review process that treats all proposals equally, based on the funding criteria set out by the funding body.
- External audits at regular intervals.
- Clear internal and external communication.
- Regular consultation between funders, researchers and research management offices.
- Provision to assess high-risk projects, unknown researchers, collaborative and multi-disciplinary research.
- Clear programme guidelines and expectations.
- Training programmes at all levels for all stakeholders to ensure that the programme is competently run and a high level of performance is attained.
- Information and experience sharing with other funding bodies to promote good practice.

### Box 3: Research management perspective: key characteristics of a well-run system

#### A well-run system might include:

- The ability to source a diverse range of funding.
- The ability to vet proposals for compliance with the funding body's requirements and (where necessary) filter proposals submitted to the funding body.
- Capacity to guide researchers through application and proposal writing processes, and provide direct assistance in areas covering project and budget management.
- Capacity to prepare researchers for face-to-face interviews with funders.
- Working closely with finance departments and funding bodies to ensure all reporting requirements are met.
- Outlining overhead requirements and specifying indirect research costs.
- Helping researchers to project manage their research and build in monitoring and evaluation measures.
- Developing a clear and systematic understanding of research specialisms within the institutions to help identify suitable funding and nominate academic staff to act as peer reviewers.
- Advocating protected time for proposal writing and peer-review activities.
- The recognition of peer-review activity/requests in institutional performance and promotion criteria.

## Training

The need for training and consultation between funding bodies, research management professionals and researchers is critical to the development and operation of a well-run system. Training is particularly important in the areas of grantsmanship (the art, rather than the science, of writing good proposals), project management, procurement and financial administration. This was a message that emerged clearly from an interview with staff at the CNHR in Kenya, where training is focussed not only on applicants but also on the wider research team. They run a specific training programme on financial and grants management and insist on having direct contact with procurement and finance staff. See Appendix C for details of the CNHR financial and grants management training. They also offer workshops on proposal development, identifying what reviewers are looking for and what the common pitfalls are.

Without training and collaboration between institutions and funding bodies, the Matthew Effect of accumulated advantage will almost certainly come into play in the distribution of research funds. Even when organisations such as the CNHR, HRCSI and National Research Foundation in South Africa work directly with institutions and individuals to strengthen their funding potential, it is still the case that more experienced institutions and individuals with greater capacity and resources at their disposal will invariably do better in a competitive system than their more disadvantaged counterparts. The CNHR report that the strongest proposals they receive typically come from established and dedicated research institutions, while other institutions struggle, often without an appropriate support system and little or no protected time for developing proposals. They emphasise that much more support (and resources) is required if applicants are to meet the standards required to level the playing field. This is also an important consideration for the HRCSI in Malawi, where junior researchers who have submitted a viable concept note are invited to attend a five-day proposal development workshop to help them develop their

concept note into a viable proposal. Similarly, the National Research Fund in Mozambique found with its initial call in 2006 that the quality of proposals was low and so began offering courses in research methodology as well as proposal writing, which led to a clear improvement in the quality of proposals. Currently, they run three courses a year and around 300 people attend each course. The intention is not only to provide additional support to early-career researchers (one of the areas of weakness in many peer-review systems) but also to provide assistance to researchers who may not have sufficient institutional support in drafting proposals.<sup>3</sup>

Institutional support is of critical importance to the success of individual proposals: the skewed distribution of funding across institutions that offer different levels of support bears testimony to this. Tertiary and research institutions have a strong vested interest in the ability of their researchers to attract research funding. They therefore have a growing responsibility to prepare and train their researchers to participate effectively in competitive funding processes. Their capacity to do this, however, varies significantly, with some institutions providing comprehensive support while others provide limited or no support at all. Among the institutions that responded to a brief consultation on the competitive process, virtually all indicated that they offered some form of training or mentoring for staff applying for research grants and where training was not offered, plans were underway to develop this or the demand for training had been identified. Given that improving the quality of research-grant proposals benefits both research institutions and funding bodies, there is a strong logic for institutions and funding bodies to work together toward this joint objective.

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<sup>3</sup> Another example might be the European Commission funded European and Developing Countries Clinical Trials Partnership (EDCTP) which awards specific grants for capacity building. In Uganda, €50,000 was awarded to a project to develop a tracking system for research activities in the faculty of medicine at Makerere University, and to strengthen the infrastructure of the Institutional Review Board (IRB) Secretariat, HR capacity, and to create a sustainable financing mechanism to support IRB activities. See [www.edctp.org/](http://www.edctp.org/).

### 3. Current peer-review practices

The success and strength of any competitive system hinges on the efficacy of its proposal evaluation. In most cases the methodology for assessing proposals is through some system of peer review. As more competitive funding research grants become available, the role and quality of peer review is likely to become an increasingly important consideration in strengthening research capacity in Africa. In principle, peer review has considerable credibility and support among the academic community; in practice, however, there are many difficulties in developing strong systems of peer review, especially where the research pool is small, grant-management systems are underdeveloped and the culture and expectations of peer review are not clearly established.

In a 2006 report for the UK Research Councils on the efficiency and effectiveness of peer review it was acknowledged that peer review is associated with high-quality outputs and objective decision-making, but is costly and bureaucratic. In the survey underpinning the report, 93% of university researchers supported the use of peer review, recognising that while there is a substantial time commitment, it is an open, transparent and fair system that tends to identify the highest quality research proposals (Research Councils UK, 2006: 36). Similarly the South African National Research Foundation (NRF), following a comparable examination of their peer-review processes, concluded that peer review of research applications, with the confidence it engenders among the academic community, provides the 'cornerstone of the grant-making function' (NRF, 2009: viii).

Even where a more critical perspective of peer review is adopted, there remains a sense that it still provides the best qualitative foundation for large-scale allocations of research funds. A recent report by Rand Europe on alternatives to peer review for allocating research funds acknowledged that peer review continues to be the 'best method for review of grant applications in many situations' (Wu et al, 2011: 1). Moreover, the majority of the 'alternative approaches' it highlights involve some form of peer review, or it is unclear how successful applications are selected. Nevertheless some of the alternative approaches described, such as the 'sandpit model', 'milestones and renewal approaches' and 'single person reviews', might be worth considering as supplementary and complementary methods for funding bodies to adopt alongside the more conventional peer-review mechanisms, rather than as a replacement of them.<sup>4</sup>

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<sup>4</sup> Selected alternatives to peer review described in Wu et al (2011):

- **Sandpit model:** Researchers are brought together with experts and funders in a workshop where research ideas are dynamically refined and the strongest proposals are awarded at the end of the workshop. This approach addresses weaknesses such as lack of interaction between researchers and reviewers, time delays in processing outcomes and creates a highly transparent process.
- **Milestones/Renewal:** Looks at funding big research projects incrementally, perhaps funding smaller projects that work toward a long-term goal, but allowing the funder to change course if the smaller projects prove unproductive. Equally, renewal options give the funder the right to continue or stop funding projects depending on their results – it is not made clear however, how these milestone and renewal approaches are assessed.
- **Single person reviews** are fairly self-explanatory and are aimed at streamlining the process but also seen as a possible method to limit the conservatism of panel consensus. Placing all the responsibility for decision-making into the hands of a single individual obviously has many attendant risks and the report suggests this kind of approach might be best used for ad hoc funding instruments but also for areas of portfolio management in a pre-defined programme area.

Other approaches described in the report include using multi-stakeholder/interdisciplinary peer-review committees (which does not seem to be an 'alternative' to the peer review per se).

For more information see: [http://www.rand.org/content/dam/rand/pubs/technical\\_reports/2011/RAND\\_TR1010.pdf](http://www.rand.org/content/dam/rand/pubs/technical_reports/2011/RAND_TR1010.pdf)

## Principles of good practice

While the fundamental principles underpinning effective peer review, such as research excellence, transparency, accountability, impartiality, efficiency, speed and confidentiality are widely agreed upon, implementing these principles can prove difficult. Institutions and the research management structures that exist within them have an important role to play in strengthening and embedding peer review into the research culture. The NRF emphasises the need for institutions to take 'greater responsibility for the quality of the initial screening of applications by members of their staff as well as by explicitly recognising the involvement of their staff in the peer-review system' (NRF, 2009: 26). As highlighted above, institutions have an important role to play in strengthening and supporting the mechanisms of competitive funding and peer review. However, there are wide variations in the extent to which they fulfil this role.

In 2011 the European Science Foundation (ESF) undertook a major analysis of peer-review practices across Europe, surveying 30 organisations across 23 countries. Emerging from the initial survey was a guide to peer review which focussed on 'pillars of good practice' as well as methodological approaches. Five areas of good practice in peer review were identified:

- **Core principles** – defined as excellence of project proposals; impartiality of reviewers; transparency (including giving all applicants the right to reply to the conclusions of the review); appropriateness of purpose (in relation to the criteria of the call, the research area and in proportion with the investment and complexity of the work); efficiency and speed; confidentiality; ethics and integrity.
- **Integrity of the process** – upholding and adhering to core principles with all actors in the system (applicants, reviewers, panels, committee members, Chairs, programme officers and other staff) acting within the following parameters: honesty in communication; reliability in performing research; objectivity; impartiality and independence; openness and accessibility; duty of care; fairness in providing references and giving credit; responsibility for the scientists and researchers of the future.
- **Quality assurance** – monitoring quality might include having staff members with a specific mandate to perform this function; a dedicated office within the organisation; or dedicated committees or boards outside of the organisation. Peer-review practices are often assured through external committees or by staff members with a specific mandate.
- **Governance structure** – the main elements of credible and effective governance would include identification of the relevant actors and clarification of responsibilities; definition of roles and responsibilities of key actors; definition and dissemination of key decision-making processes and approval processes; definition and dissemination of procedures to effect continuous improvement; availability and effective allocation of resources; terms of reference and codes of conduct for all participants.
- **Methodology** – using the appropriate method for conducting the review.

The UK-based Medical Research Council, which also operates two units in Africa, considers the fundamental characteristics of strong peer review to be: consultation with 'true experts', anonymity, transparency, swift decision-making and clear and consistent guidance for the applicant and the reviewer. They also emphasise balancing excellence, strategy and research. Within the African context it might also be important to consider such elements as regional collaboration as well as institutional

and researcher support as fundamental elements of an equitable system. In other words, the need to build funding mechanisms that address the significant disparities in institutional research management capacity and support must be acknowledged.

In a peer review seminar held in March 2012 for African stakeholders (including funding bodies and institutions) hosted by the NRF and the Association of Commonwealth Universities (ACU), it was suggested that additional principles that might be emphasised within the African context would be:

- Clear guidelines of the processes involved.
- Expertise in review processes as well as in content and subject matter.
- Fairness.
- Transformation and excellence: supporting disadvantaged groups and creating equity by providing appropriate support and using appropriate instruments.

The emphasis here, especially in relation to the latter point, is to work toward a more level playing field where there is a clear understanding of the processes involved and the appropriate support required for institutions and researchers to comply with those processes is available.

## Different options for peer review

Turning from principles to methodology, there are broadly speaking two main approaches to peer review for funding proposals: the one-stage and two-stage methods. Smaller schemes tend to adopt the one-stage process, whereby proposals are only reviewed by members of the panel that will adjudicate on behalf of the funding body. This is the process used by the HRCSI and CNHR, both relatively small schemes. The two-stage process typically distributes proposals to a number of external and remote assessors (with specific expertise in the relevant subject area) who comment and in most cases score proposals according to their viability, quality and compliance with funding requirements. These comments and scores are then submitted for the second-stage assessment by a deliberative panel that puts forward the final recommendations based on the comments and scores of the external assessors and the objectives of the scheme. Most schemes tend to adopt a version of the two-stage process as it allows greater flexibility in consulting with subject specialists.

There can be variations; for example, in some cases applicants will be given a right of reply in the two-stage process (considered to be a core principle of good practice by the European Science Foundation), where they can see the comments submitted by the external reviewers in stage one and can submit a response to the panel if they believe there are inaccuracies of fact or interpretation. In other examples this goes further, and applicants are allowed to revise and resubmit their proposals based on the comments of the assessors. Other stages can also be part of the process, such as expressions of interest and interviews. Appendix A describes the processes used in a number of examples of competitive research-funding programmes operating in Africa.

In assessing the pros and cons of these approaches it could be argued that the one-stage 'area panels' are more efficient in terms of time and resources but may lack the technical rigor of the two-stage approach. In terms of efficiency, one of the biggest funding bodies, the National Science Foundation

(NSF) in the US, make a strong case for panel-only reviews. They have steadily increased the proportion of proposals reviewed by panel only over the last 15 years from around 40% to nearly 60% (NSF, 2011: 29). They note that while a panel of 25 reviewers could possibly review 200 proposals, several hundred requests for external reviews would be required for the same number of proposals, along with all the administrative brokering that this involves (NSF, 2004: 14). More substantively, however, panel reviews allow for more discussion and comparison of proposals and has advantages for multi- or inter-disciplinary proposals.

Another interesting trend within the NSF, which might be particularly useful in an African context, is the use of virtual panels. While still used for only a very small proportion of proposals (only about 1% of proposals in 2010) it has increased steadily from 2005, when 11 proposals were reviewed by virtual panels, to 2010 when 514 proposals were reviewed (NSF, 2011: 30). Investments in infrastructure are underway for more virtual activity. Innovations in the use of technology, in particular video conferencing and interactive/online panel systems, might open up access to a much broader pool of international peer reviewers at relatively little cost. In their report on promoting quality research (NRF, 2009), South African NRF recommend that greater use is made of modern video-conferencing technology for initial briefings, synchronisation of standards and procedures as well as for adjudication panels. However, the initial capital investment in technology and the on-going investment in ICT infrastructure might be difficult for smaller programmes and funding bodies.

In addition to the stages of the peer-review process there can be variations in the degree of anonymity employed. Single-blind reviews are the most common approach (where the reviewer knows the identity of the applicant(s) but the applicant(s) does not know the identity of the reviewer. Double-blind reviews, where neither the reviewer nor the applicant(s) know each other's identity are less common, as information about the applicant will likely form part of the assessment. Much less common is a completely open process where the identity of all parties is open. The main danger with the latter approach is that the comments of the reviewer might be less candid if their identity is known.

The main determinant of the system used tends to be the size of the funding scheme (how many proposals are funded) and the availability of peer reviewers. While larger schemes tend to use external reviewers to account for the diversity of specialisms in the proposals submitted, smaller funds may not have the resources to identify multiple peer reviewers for each proposal. Beyond the issue of resources, smaller schemes often have a disciplinary focus or specialism (e.g. health or agriculture) which reduces the need for a wide pool of reviewers from diverse disciplinary backgrounds and allows for a concentration of disciplinary expertise within the panel. Appendix A provides selected examples of the processes used by different peer-review research-funding schemes in Africa.

## Challenges associated with peer review and competitive funding programmes

### Cost

Sourcing, recruiting, incentivising and training peer reviewers all come with their own challenges. Chief among them is cost. Peer review, done well, is not cheap. In the UK in 2006 it was estimated that the cost for preparing and reviewing proposals and reports to the UK Research Councils amounted

to around £196 million per annum (Research Councils UK, 2006: 3). Direct costs incurred by the Research Councils were in the region of £10 million, while the costs of preparation and submission were the largest outlay (constituting around 62% of the total costs). With the majority of submissions unsuccessful (around 70% in the UK), this is a high price to maintain a system that is genuinely competitive (Research Councils UK, 2006: 3–4).

### **Conservatism**

Another challenge is the inherent conservatism in peer review, where proposals that are high risk and have a significant chance of failure are avoided. Moreover, proposals that stridently challenge received wisdom may also come up against significant opposition among peer reviewers who may have an academic stake in the received wisdom. In addition, traditional peer-review mechanisms can often be ill equipped to assess multidisciplinary research proposals and unconventional ideas. The structures might also disadvantage early-career researchers who have a less established academic record and therefore present a higher risk than their more experienced counterparts. The OECD report on the future of higher education and globalisation concludes with the question ‘how can funding systems accommodate and encourage risk taking in research activities (and tolerate failure)?’ (OECD, 2009).

Funding bodies are increasingly attempting to implement measures to moderate some of these in-built prejudices, such as special schemes for early-career researchers or for high-risk, high-impact research. In 2007 the US National Science Foundation, recognising some of these risks, modified their peer-review criteria by putting in place various mechanisms to help identify potentially transformative research areas and proposals. Other schemes are specifically targeted at early-career researchers, with examples emerging from well-established funding bodies such as the National Institutes of Health in the US, as well as from some of the smaller, newly established schemes in Africa.

Moreover, funding bodies are increasingly focussed on supporting multi-disciplinary research. Traditionally, peer review has been viewed as quite a weak mechanism for assessing research proposals that extend beyond neat disciplinary boundaries, not least because adjudicating panels tend to have a disciplinary focus. But responding to the growing trend toward multi-disciplinary research, funding bodies are beginning to build this into their processes and strategic priorities for assessment. The European Research Council (ERC) awards are geared toward ‘frontier’ research, which in most cases crosses disciplinary boundaries. Almost a third of their proposals are reviewed by more than one panel. In addition, the ERC has a specific funding category for starting research grants which are designed to support researchers in the early part of their career (2–12 postdoctoral years) and advanced investigator grants which support established researchers pursuing ‘groundbreaking, high-risk/high-gain research’ (ERC, 2012: 8–9). Interestingly, the 2012 budget for the starting grants is higher, at €730 million, than for the advanced grants (€680 million) (ERC, 2012: 52). On a much smaller scale, the HRCSI in Malawi have emphasised that they are keen to further promote multi-disciplinary research in their grant programme.

### **Bias**

Linked to the issue of conservatism, it is also the case that competitive funding models and peer review have an in-built bias toward more established researchers and well-resourced institutions which are better placed to compete for funds. This could be particularly problematic in emerging sectors

where many institutions are struggling to build capacity. It raises the issue of the Matthew Effect of accumulated advantage, where those with greater advantage are able to leverage their resources to obtain further advantages. Resources become concentrated among those institutions that already have some capacity to support their academics/researchers to compete for funds, while those with little or no capacity fall even further behind. This was confirmed by the experiences of the CNHR, the HRCSI, and the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM), who find that the strongest proposals consistently come from more established and dedicated research institutions rather than generalist universities.

In sectors characterised by significant disparities in the provision of research support services, some obligation must fall on the funding bodies not to reinforce or widen existing gaps. While there are serious limitations regarding what a funding body can do to offset deeply entrenched variations in institutional capacity, there are some tools at their disposal. Even without the resource advantage, evidence suggests that reviewers are favourably biased toward academic proposals stemming from more 'prestigious' institutions, perhaps making an assumption that researchers and academics from these institutions are more likely to produce high-quality outcomes.

By its very nature, relying on individual judgements and opinions, the peer-review process invites bias; it is impossible and perhaps not even desirable to completely remove bias from it. Provided the processes of soliciting different opinions and subjecting them to the scrutiny and reasoned debate of the panel are rigorous, the biases of individuals should be tempered, although group biases, where they exist, might be a little more difficult to overcome.

#### Box 4: The trouble with peer review

- Cost and bureaucracy.
- Lack of national expertise to assess a diverse range of proposals.
- Conservatism – getting peer reviewers who endorse multi-disciplinary and high-risk research as well as new researchers with little academic track record.
- Difficult to incentivise often poorly paid academics to provide their services as reviewers for little or no remuneration, especially where a culture of paid external consultancy is the norm and 'extra-curricular' academic duties are not firmly established.
- Potential for over-burdening reviewers.
- Anonymity and conflict of interest, especially where research communities are small.

#### Limited resources and small communities of researchers

Perhaps the most significant challenge for many African countries is the availability of human and financial resources to support a critical mass of competitive, peer-reviewed research grants. With the exception of the funds administered by the NRF in South Africa, the Education Trust Fund in Nigeria and by big donors such as the World Bank, competitive funding schemes tend to be relatively small in scale. This creates problems in developing the hard and soft skills that will equip and support researchers to compete for research funds, and in generating sufficient willingness among the academic community to act as reviewers for little or no remuneration. The latter generally requires an established culture of peer review where it is seen as part of the academic role and recognised as such

by academic employers. Even if this is the case, where research communities are relatively small the burden that is placed on individual reviewers can be very high and issues around conflict of interest may be particularly problematic. Even the NRF, much better placed than funding bodies in other African countries, speaks of the 'constraints of the relatively small size of the research community' (NRF, 2009: 20). They highlight the fact that the cumulative effect of a small pool of researchers, reviewer fatigue and 'identifiability' of reviewers make the operation of a genuinely anonymous system very difficult (NRF, 2009: 19). One funding body consulted as part of the project indicated that it was not unknown for a member of the panel to have submitted a research proposal to the panel on which they sit, taking conflict of interest to a new level. Internationalising the pool of reviewers is one option but incentivising academics to participate in the system (both national and international) is critical.

Compared with the vast databases of reviewers that are held by funding bodies in Europe and the US, the resources in Africa are minute. Even for the NRF, sourcing international reviewers (both inside, but especially outside, the continent) poses problems. Relatively small-scale schemes might actually find it easier to approach small numbers of academic reviewers who have connections with the country in which the scheme is situated, and who might therefore be more receptive to invitations to act as reviewers. However, for larger national schemes, systematic access to international reviewers is more problematic. In South Africa, around 20% of peer reviewers (where continent of origin is known) are international and around 15% are from outside of Africa altogether. The pool of reviewers (for 2008/2009) was 4,242 (2,830 with known continent of origin). The majority of reviewers are drawn from nominations by applicants. The NRF are able to draw on two academic databases to source potential reviewers but they acknowledge that the quality of the information contained in the databases is extremely uneven (NRF, 2009: 21).

## Identifying, accessing and incentivising peer reviewers

How does a funding body set out to identify and recruit appropriate researchers for peer review? This is a fundamental consideration in the establishment of any competitive funding system and, depending on the size of the funding scheme, one of the biggest challenges. The NRF in South Africa predominantly uses nominations by applicants as a way of identifying peer reviewers. This approach accounts for around 70% of reviewers; the remaining 30% are identified by the programme officers. However, the NRF has reported serious problems in finding sufficient, suitable and available reviewers, with the ratio of invitations to acceptance at 3:1 (NRF, 2009: 20). Moreover, relying so heavily on applicants to nominate their own peer reviewers is a cause for concern (the jury is out on whether nominated reviewers are likely to give a more or less favourable review). The Medical Research Council (MRC), also in South Africa, similarly finds that the acceptance rate among reviewers approached stands at around 30% with approximately 18,000 review requests sent for about 3000 proposals. In more established research sectors, many years have been spent building databases of researchers and academics who can be called on for peer review. The NSF in the US has a database of more than 300,000 reviewers that it can potentially call upon.

Nonetheless, once a substantial resource such as a well-populated database (even on a much smaller scale than the NSF) has been developed, maintaining it requires time and effort. A centrally

maintained, comprehensive database of academics with up-to-date information on research interests and specialisms is beyond the scope of many smaller funding bodies. An interesting model that offers an alternative to the centrally maintained database comes in the form of the Brazilian Lattes platform.<sup>5</sup> Created by the Brazilian National Council for Scientific and Technological Development (CNPq), it is a database of active researchers in Brazil that is updated by the researchers themselves. Researchers and academics are obliged to enter their information on the database to be eligible for a number of government subsidies and the self-maintained profiles form the basis of the biographical information for any research proposals submitted. The database currently contains information on 1.6 million researchers (including PhD and Masters students).<sup>6</sup> This not only saves the researchers time when applying for grants and other forms of subsidy, it also provides the funding body with an invaluable bank of data that can be put to multiple uses, not least the sourcing of peer reviewers. The database is also open access, making the information available to any interested body both nationally and internationally. Researchers who intend to apply for research funding have a strong incentive to keep their profile up to date. To create a similar platform in Africa would be contingent on funding bodies and government agencies working together to create sufficient incentives and conditionalities for academics and researchers to be compelled to enter and update their information. However, with the proliferation of various social and professional online networks, the culture and familiarity of developing online profiles is more established now than ever before and might gain traction among the academic community, especially if sufficient incentives are put in place.

The expertise and knowledge contained within the funding body, as well as the status and benefits of serving the funding body, are also important considerations in identifying reviewers. At the NSF, programme officers, often experts themselves, will use a variety of sources including their own knowledge, applicant suggestions, references attached to proposals, published papers and scientific citations to identify potential peer reviewers. Moreover, the status of acting as a reviewer for the NSF is sufficiently prestigious and recognised among the academic community to motivate academics to participate. Reviewers are also researchers and one of the benefits of acting as a reviewer is gaining insight into the peer-review and proposal-writing process and its requirements, useful for any future proposals that the reviewer is likely to submit.

In some cases peer reviewers are paid for their services. The World Bank, for example, offers a nominal sum for services rendered. The Commission for Science and Technology (COSTECH) in Tanzania also provides remuneration to peer reviewers (this was initially at US\$20 and then increased to US\$100 per proposal). The National Research Fund in Mozambique initially paid US\$100, which was then reduced to US\$50. For many funding bodies, paying for reviews represents an unsustainable financial burden if carried out on a large scale. In most established systems peer review is seen as part of an academic's responsibility. However, embracing this additional responsibility might prove difficult where there is no long-standing culture of doing so and where remuneration for academic staff is often very low by international standards and, as a result, staff may expect to be paid for additional work undertaken.

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<sup>5</sup> Plataforma Lattes website: About the Lattes Database. See <http://lattes.cnpq.br/english/conteudo/aplataforma.htm>

<sup>6</sup> Plataforma Lattes website: Data and Statistics. See <http://lattes.cnpq.br/english/conteudo/estatisticas.htm>

Making the peer-review enterprise more prestigious is one way of encouraging support from the research community. Anecdotally, it appears that big international funders, such as the World Bank, the major US philanthropic Foundations and the Wellcome Trust, do not have as much difficulty in attracting reviewers and this might be attributable in part to the kudos associated with requests from internationally recognised institutions and the perceived opportunities this might lead to. National bodies trying to cultivate a culture of good will and participation might require more effort. The analysis of the NRF in their evaluation of peer review for grant-making is instructive. They put forward a number of suggestions including:

- creating a college of reviewers nominated by the research community;
- providing accreditation for peer reviewers who have gone through some form of training;
- recognition from institutions in their reward and promotion criteria; and
- personalised acknowledgement and communication with reviewers (NRF, 2009: 25).

In addition, it was suggested at the ACU/NRF seminar of African funding bodies and institutions that professional societies requiring registration in order to practise could be encouraged to recognise voluntary professional activity, such as peer review, as part of their registration criteria. Another, more controversial, suggestion was that within the points systems used by funding bodies to assess proposals, points should be awarded in recognition of previous service as a reviewer. This might be opposed by researchers and academics on the grounds of fairness and introducing irrelevant criteria into the assessment process. Moreover, it might disadvantage early-career researchers who are less likely to have served as reviewers. It is nevertheless an idea that could be considered for further refinement.

Among the seminar delegates there was strong consensus that an African reviewer database would be useful and, linked to this, that the options and development of a college of reviewers should be more closely scrutinised. Box 5 highlights some international examples of active and proposed peer-review colleges, detailing two different approaches to developing a college. In the first example, the college is an exclusive club of eminent leaders within their field, with members recruited through a competitive process. In the second, more inclusive approach, the college encompasses all the reviewers used by a particular body with selection through nomination. The final example looks at the proposal for a Europe-wide peer-review college put forward by the European Science Foundation. Developing a co-ordinated peer-review mechanism within this multi-lingual and multi-system environment, with substantial numbers of research intensive institutions, creates significant challenges. Developing a multi-national approach to peer review in Europe is in many ways more logistically problematic than an equivalent set-up in Africa. Nevertheless, Europe has a vast infrastructure and resource base for multi-national collaboration that could be used to fund and sustain a co-ordinated system, which is not the case in Africa. It may be that some aspects of peer review, such as training and building a database of reviewers, could take place on an international level but co-ordination of peer review for particular schemes and defining criteria for assessment would continue to take place on a national basis.

## Box 5: Active and proposed peer-review colleges

### Australian Research Council – College of Experts

<b>Rationale</b>	The College of Experts is tasked with providing strategic advice to the Australian Research Council (ARC) and assisting with the identification of research excellence and innovation in grant submissions.
<b>Composition</b>	It comprises 82 members, experts of international standing drawn from the Australian research community, including higher education, industry and public sector research organisations. Members of the college are distinct from the 19,000 assessors, who assess individual proposals.
<b>Organisation</b>	The ARC College of Experts members are divided among five panels: Biological Sciences and Biotechnology (BSB), Engineering, Mathematics and Informatics (EMI), Humanities and Creative Arts (HCA), Physics, Chemistry and Earth Sciences (PCE), and Social, Behavioural and Economic Sciences (SBE).
<b>Role</b>	<ul style="list-style-type: none"> <li>• Assign and nominate assessors.</li> <li>• Participate in selection panels.</li> <li>• Provide strategic advice to the ARC on emerging disciplinary and interdisciplinary developments, and innovative approaches to research.</li> </ul>
<b>Selection</b>	Members are appointed by the Minister for Education. Every year the ARC conducts a competitive nomination process to replace retiring members.
<b>Remuneration, incentives and benefits</b>	College members are considered to be part-time holders of public office, and receive an annual fee which is determined by the Remuneration Tribunal (rates for 2011: members AUS\$19,540 per annum and Chairs AUS\$27,670 per annum). <sup>7</sup> In addition, given the exclusive nature of the College, membership is an explicit recognition of leadership and status in the field.
<b>Term</b>	Appointed for periods of between one and three years.
<b>Training</b>	New members of the college attend an induction seminar.
Source: <a href="http://www.arc.gov.au/general/assessment_process.htm">http://www.arc.gov.au/general/assessment_process.htm</a>	

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<sup>7</sup> The Swinburne Research Bulletin: Issue no.185 19 October 2010:

[http://www.research.swinburne.edu.au/researchers/bulletin/2010/October/newsletter\\_185.pdf](http://www.research.swinburne.edu.au/researchers/bulletin/2010/October/newsletter_185.pdf).

See also ARC College, Information Kit for appointment in 2012: [http://www.arc.gov.au/pdf/coe\\_nominations/Information\\_Kit.pdf](http://www.arc.gov.au/pdf/coe_nominations/Information_Kit.pdf)

## United Kingdom – Arts and Humanities Research Council (AHRC)

<b>Rationale</b>	The council is tasked with recruiting reviewers who agree to review a number of proposals every year. In addition the council administers the distribution of proposals in such a way that reviewers can compare the quality of a range of grant submissions, rather than assessing isolated examples.
<b>Composition</b>	The AHRC peer-review college consists of the pool of 1,300 assessors. The AHRC uses four non-standing subject-based panels to make its funding decisions and panellists are convened from the college of reviewers.
<b>Organisation</b>	Members are appointed within a number of categories: <ul style="list-style-type: none"> <li>• Academic reviewers – to review proposals for academic research and postgraduate training within their area of subject expertise. Nominations are sought from across the AHRC’s subject domain.</li> <li>• International reviewers – to review research proposals of potentially international significance.</li> <li>• Large collaborations reviewers – to review very complex proposals or proposals involving issues at an organisational level.</li> <li>• Knowledge transfer reviewers – to provide reviews of proposals to knowledge transfer schemes in the UK.</li> <li>• Reviewers providing a perspective from outside the academic community – to provide reviews on the social, cultural or economic impact of proposals.</li> <li>• Technical reviewers – to review the technical aspects of research proposals.</li> </ul>
<b>Role</b>	General reviewer: <ul style="list-style-type: none"> <li>• Review proposals.</li> <li>• Reviewers are expected to review around eight proposals over 12 months.</li> </ul> Panellist: <ul style="list-style-type: none"> <li>• Rank and grade proposals.</li> </ul>
<b>Selection</b>	Candidates must be nominated by senior staff or representatives within higher education institutions or other organisations, learned societies or professional associations.
<b>Remuneration, incentives and benefits</b>	Panellists receive a fee for attending meetings and can also claim expenses associated with attendance. Reviewers do not receive a financial incentive, although they can claim expenses for attending college events. Benefits are considered to derive from exposure to the peer-review process, including the opportunity to monitor the research developments in the reviewer’s area(s) of expertise and to gain an understanding of the application process. Reviewers may also be invited to serve as panel members. Membership constitutes evidence and recognition of a strong reputation within the subject community.
<b>Term</b>	College members are normally appointed for a term of four years.
<b>Training</b>	All new members attend an Induction Day which gives them the opportunity to learn about the AHRC peer-review process and to participate in a mock panel session.
Sources: <a href="http://www.ahrc.ac.uk/about/PeerReview/Pages/default.aspx">http://www.ahrc.ac.uk/about/PeerReview/Pages/default.aspx</a> Peer-review college e-handbook: <a href="http://www.ahrc.ac.uk/About/PeerReview/Pages/PeerReviewCollegee-Handbook.aspx">http://www.ahrc.ac.uk/About/PeerReview/Pages/PeerReviewCollegee-Handbook.aspx</a>	

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## A peer-review college in progress – European Science Foundation

<b>Rationale</b>	The aim is to create an international assembly of peer reviewers to support European funding, research performing and evaluating organisations, as well as to inform and shape peer review across Europe and internationally. The college will aim to deliver standard, high-quality peer-review measures across Europe.
<b>Composition</b>	The rough estimation of required number of reviewers is based on the current European Science Foundation research taxonomy based on 800 sub-fields. With 10–20 experts for each sub-field, the current estimates are for a college comprising between 8,000 and 16,000 members. Members will be selected from former/current awardees and through nominations by European Science Foundation member organisations and Europe-wide peer voting. It is estimated that this process will take three to four years.
<b>Term</b>	Three years.
<b>Challenges identified</b>	The challenges in setting up the peer-review college include the following: <ul style="list-style-type: none"> <li>• Support, participation and approval by the broader research community.</li> <li>• Budget and resources.</li> <li>• Legal issues.</li> <li>• Definition and agreement on quality standards and the taxonomy of research fields so that they are compatible and comparable across Europe.</li> <li>• The selection process for members.</li> </ul>
Source: <a href="http://www.esf.org/activities/mo-fora/peer-review/7th-working-group-meeting-on-peer-review.html">http://www.esf.org/activities/mo-fora/peer-review/7th-working-group-meeting-on-peer-review.html</a>	

Peer review colleges do not, however, always prove to be an effective means of cultivating commitment. The experience of the Medical Research Council was that initial enthusiasm dropped off after a relatively short period of time and the decision was made to dispense with the concept. The benefits of a more structured and organised approach to recruiting reviewers needs to be balanced against the administrative requirements, especially if being considered on an international or continental scale, and the degree to which it proves effective in attracting and incentivising reviewers.

## Training for peer reviewers

One area in which a college of peer reviewers might prove effective is that of training peer reviewers. Ensuring that all participants in the peer-review system are well-versed in the principles of peer review and how to apply them, as well as what is expected of the reviewer, is crucial to the success of the system. Above we looked briefly at training institutions and researchers to meet the requirements of a competitive system; it is equally important that funding bodies properly induct and prepare reviewers so that assessments are of comparable detail, quality and consistency.

The World Bank guide states that grant-making processes will run more smoothly and results will be more consistent if proposal evaluators are provided with appropriate training, which might include such elements as an overview of the programme, discussions around conflicts of interest and professional ethics, a review of the guidelines and practice in scoring hypothetical proposals (Saint, 2006: 18). The NRF reinforces the importance of ensuring that reviewers are clearly briefed about the expectations and requirements of their role. In the survey they conducted of the research community in South

Africa, the vast majority of the 1,800 respondents thought it was important that peer reviewers are properly inducted before they serve. In the subsequent report they recommend that ‘induction and training of reviewers should be elevated as a priority within the peer-review system and the necessary mechanisms and material should be developed’ (NRF, 2009: 24). The CNHR give their peer reviewers a written handbook providing detailed guidelines on what is expected and the criteria by which they are to assess and score proposals. However, given that the majority of their peer reviewers are international, that the scheme is small, and that the number of grants awarded is limited, the practicality of organising face-to-face training for peer reviewers would be challenging.

One way of introducing widespread training for peer reviewers would be to include it as a compulsory part of a PhD programme (preferably together with training on grantsmanship). This would not only serve to familiarise new researchers with the requirements of funding bodies and the criteria for good proposal writing, but would also reinforce the notion of peer assessment as an inherent part of the academic role.

#### Box 6: Areas that training of peer reviewers might cover

- Background of the funding body and funding scheme: political and policy environment; strategic priorities; objectives and criteria for the award.
- Overall role and expectations of the reviewer, including level of commitment (number of assessments, time, travel etc.)
- Areas to be covered by the review, e.g. quality of proposal; originality; value to the research field; viability of successful completion; value for money; qualification of applicant(s); assessment of resources requested; potential weaknesses and probabilities of failure; monitoring, evaluation and reporting capacities; financial management capacities; sufficient institutional support for research.
- How reviews should be formatted and submitted.
- Length of reviews (level of detail required).
- Detailed information and discussion around conflict of interest, confidentiality and codes of conduct.
- Guidance on the grading/scoring system.
- Guidance on assessing high-risk proposals, for example:
  - Proposals from early-career researchers without an established track record of research or publications;
  - Collaborative proposals;
  - Multi-disciplinary research proposals;
  - Pioneering and transformative research proposals.
- Role of panel reviewers (as distinct from remote reviewers).
- Format and content of panel meetings.

### Improving systems and making them more efficient and effective

Distinctions should be made between large-scale systems responsible for managing large budgets and awarding scores of research grants, and small schemes that offer a handful of awards. Greater emphasis on efficiencies, clear and consistent processes and effective mechanisms for communication with, and the identification, recruitment, training and incentivisation of peer reviewers is required for bigger schemes. The need for effective collaboration with institutional research management

structures also becomes important in vetting and enhancing the quality of research proposals, as well as managing, monitoring and reporting in accordance with research-grant requirements. In large-scale schemes, advocacy on behalf of researchers who require time and recognition for developing research proposals and potentially have an important role in identifying academics who are willing and able to act as peer reviewers is important, as is ensuring that peer reviewers are recognised within their institutional structures for performing this role.

Useful lessons can be gleaned from the experience and evaluations of established systems of peer review. The NRF undertook an evaluation of its systems in 2008, and in 2006 the UK Research Councils commissioned an extensive examination of the efficiency and effectiveness of peer review in the UK. Both reviews identified that the major cost outlay for the peer-review process is in the preparation of grant proposals, and it is in this area that the potential for significant savings/cost efficiencies is greatest. However, given that these evaluations have been undertaken by funding bodies, the focus of the recommendations is on the business practice of funding bodies rather than of institutions and researchers. Clearly there is also a role for these other stakeholders to enhance their efficacy. This will be addressed in more detail in the institutional section below. Moreover, as with all efficiencies, the attendant risks need to be weighed against the potential savings.

Box 7 lists suggestions, drawn from the NRF (2009) and Research Councils UK (2006) reports and other sources, for reducing the costs and increasing the efficiency of the peer-review process while minimising the possible risks associated with these suggestions.

Box 7: Suggestions for greater efficiency and effectiveness in the peer-review process			
	Suggestion	Risk	Source and examples
Reducing the cost of preparing proposals	Provide a project outline stage to eliminate all but the most relevant proposals.	Adding another evaluative stage could add work if it does not considerably reduce the number of full submissions. Moreover, the outline may not be sufficient to gauge the viability of the full proposal. Another risk is that the funding body is deluged by summary proposals (which involve little investment in time). This was the case with the European Research Council which changed its process accordingly so that the summary and the full proposal were submitted in a single submission, followed by a two-step evaluation in which the summary is assessed and, if endorsed, goes through to step 2 where the full proposal is assessed. Obviously this process does not improve efficiency for the applicants, only for the funding bodies.	Research Councils UK (2006) <i>Report of the Research Councils UK: Efficiency and Effectiveness of Peer Review Project</i> . The National Science Foundation in the US use this approach. However, applicants submit the project summary as part of the full proposal as with the amended ERC process. The efficiency benefits here extend only to the funding body through facilitating more streamlined sifting of applications.

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	Suggestion	Risk	Source and examples
	Reduce the length of proposals and place greater emphasis on the past research of applicant(s).	This approach may disadvantage early-career and less established researchers. It may not provide reviewers with sufficient information to assess the viability of the research project, especially if the research proposed is high risk, transformative or multi-disciplinary.	This is being trialled by the NSF in the US.
	Consolidate research grants and increase the number of long-term costs so that less time is spent on proposal writing and evaluation and more on conducting research.	Fewer researchers would have access to funds and these longer-term awards would be highly restrictive in terms of eligibility requirements. It would be a question of determining the right balance between longer- and shorter-term awards and the duration of long-term of funding.	Wellcome Trust provides some longer-term awards (up to five years) as do the NSF. The German Research Foundation offers some very long-term awards, up to 12 years.
Reducing the cost and demands of peer review assessment	Reduce the number of reviewers required. This could be in the form of reducing the number of external reviewers per proposal to two (typically three reviewers are used) and only consulting a third where there is a disagreement between the two, or using panel-only reviews.	This is a less rigorous approach, with less expert assessment of proposals. With shorter and less costly awards this might be appropriate; for higher-cost awards more detailed assessments might be required.	German and Norwegian research councils approach only two referees and as already mentioned the NSF increasingly use panel-only reviews.
	Eliminate peer review for some types of proposal. Make greater use of expert, specialist programme managers to make executive decisions on research proposals.	This might reduce confidence in the quality of the assessment among the research community. The questions of where the line between peer-reviewed and non-peer reviewed research proposals would be drawn, and whether this would create two-tier system awards, would need to be addressed.	Research Councils UK (2006).
	Eliminate peer review of final reports where this is applicable. This is taken from the UK system, where the final report is also subject to peer review.	There is less scope for evaluating the success of the research.	Research Councils UK (2006).

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	Suggestion	Risk	Source and examples
Developing use of technology	Using virtual panels and video-conferencing technology to reduce the costs and logistical difficulties associated with face-to-face panel meetings.	The quality of discussion may be reduced when mediated by technology and if the technology is unreliable could prove very difficult to organise. Moreover, it will take some time for the technology to be widely available so that all panel members can easily access the necessary resources.	The NRF in South Africa and the NSF in the US are making efforts to utilise technology more extensively in their peer-review processes.
Procedural efficiencies	Increase sifting rates and require institutions to undertake rigorous sifting before submission.	If sifting becomes too rigorous there may be the risk of eliminating proposals that under expert inspection are found to have strong merits. This may reduce confidence in the system.	N/A
	Using dis-incentives for researchers who frequently submit unsuccessful applications and thereby put significant burdens on the system.	Could dis-incentivise a strong proposal.	N/A
	Create institutional-level quotas.	Such quotas may reduce the potential for strong proposals getting through and rely on institutional judgements about the strongest proposals, which presumes that institutions have robust procedures in place for assessing proposal quality.	N/A
	Control resubmissions.	There is a strong case for controlling multiple resubmissions but an initial resubmission, based on the feedback given by assessors, might lead to a stronger proposal.	N/A

## 4. The institution: roles and responsibilities

The costs associated with competitive research funding are predominantly shouldered by individual institutions and academics in the proposal preparation phase. The time and support allocated to proposal submissions at the institutional level varies considerably. In most cases it is dependent on the commitment and willingness of individuals to develop their research proposals in their own time. Addressing the challenges and inconsistencies of this stage in the competitive funding process is an important dimension of improving the quality and effectiveness of the whole process.

Some institutions provide comprehensive support in the form of, inter alia, training, advice, vetting, project management, financial/budgetary management and information on funding available. Other institutions offer very little support and have low levels of awareness of the external funding applications that their members of staff are submitting. Institutions with a well-established research management office, well-resourced in terms of personnel, experience and skills, are at a distinct advantage over those without. A consultation with a small group of research management practitioners at higher education institutions across Africa highlighted the close correlation between those institutions with a fairly established research management office and the level of support that is provided to research staff applying for competitive funds. As competitive funds become more widespread institutions will need to develop their research management capacity in this area if they wish to attract funding and status.

### Vetting external research proposals

Most practitioners that responded to the consultation questions about their institutional approach to competitive funding and peer review indicated that they had some form of vetting procedure in place. Those institutions that had no process for vetting proposals (formal or informal) tended to be institutions that did not attract much external funding. Some vetting approaches were systematic and comprehensive while others were more partial and ad hoc. A systematic approach is typically undertaken or co-ordinated by the research office. The research office, in most cases, does not have specific subject expertise and predominantly serves to check if the proposal meets the eligibility criteria. More qualitative approaches for checking proposals tend to reside with the faculty or a standing committee of academic staff with a range of disciplinary representation.

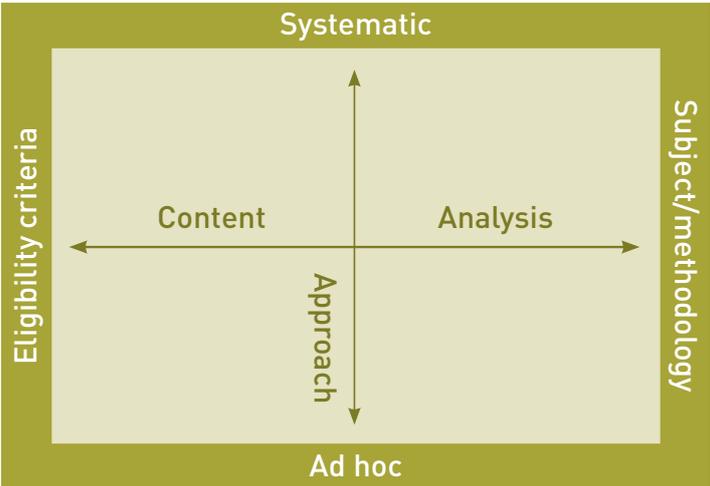
At North West University in South Africa, there is one experienced individual 'responsible for pre-proposal administration...who will give the final institutional approval to submit the proposals'. However, for quality control of the proposal content a peer-review process is undertaken within the faculty. It was noted that different faculties would adopt different quality-control mechanisms: 'in some faculties, the Research Director of the relevant research entity or Chairperson of the Faculty Research Committee will sign off the proposal before submitting it to the Research Support office. In all cases, the faculty must ensure the quality of the subject-related content before submitting the proposal to the Research Support office'.

At the University of Ghana, there is a specific research proposal review committee who carry out a preliminary review of proposals.

The approach at the Institute of Professional Studies in Ghana appears to be more proactive, reflecting the ambitions of this rather small and young institution to build its research capacity. Here there is a dedicated Research Projects Unit which has a team that helps the researcher fine-tune their proposal. The team includes an internal auditor to provide advice on the budget, and a quality assurance and project management specialist. Proposals are submitted centrally by the team, allowing for good oversight by the institution of all external proposals.

The diagram below summarises current institutional approaches and criteria for the internal vetting of external research proposals. For greater levels of efficiency and effectiveness, institutions will adopt a systematic approach to assessing eligibility within the research management structures, drawing on faculty staff to assess and give feedback on the detail of the proposal. Practical elements, such as project management and the development of budgets, should also be vetted and advised on.

**Figure 1: Institutional approaches to vetting research proposals**



**Training**

Most institutions are keen to offer their staff training in proposal writing and recognise the need, and demand, for it among their faculties. The predominant mode of training is through planned workshops and intra-faculty mentoring. In response to the consultation questions about training one institution noted that there are training programmes in place with particular emphasis on making use of senior academic staff who have experience in writing successful proposals, mentoring junior staff. Another institution provides a specific allowance for professors to mentor younger academic staff through, for example, joint research and publication. One institution offered training on a one-to-one basis with the research office providing a 'consultation service for novice researchers'.

Box 8 summarises areas covered in current institutional training practices for research staff wanting to apply for research grants.

## Box 8: Institutional training of research staff

- Addressing the thematic priorities of the funder.
- Identifying the objectives of the funding body and demonstrating how the research adheres to them.
- Clarifying the thematic focus areas of the proposal.
- Clear articulation of methodology and approach.
- The impact of the proposed research.
- Budget and financial management.
- Reviewing examples of successful proposals.
- Project monitoring and progress report writing.
- Work-plan and timetable.
- One training workshop addressed the issue of creating an enabling environment for research.

At the University of Cape Town (UCT), staff training is integral both to the internal and external proposal writing processes. Seminars and individual sessions on how to write proposals are offered by the university. Draft proposals are reviewed and final proposals are assessed by a committee that includes the Deputy Vice Chancellor, Research. UCT also has an 'Emerging Researcher Programme' specifically designed to help early-career researchers publish and apply for research funds through a programme of training and mentoring.

Two institutions pointed to specific training provided by the funding body. Examples included funding under the Development Partnerships in Higher Education (DELPHE) programme where British Council staff ran a workshop for staff involved in the project as well as for those not directly involved. Another institution referred to support from the NRF, who provide online training and, on request, can send experts to specific universities for training on particular funding programmes.

As previously highlighted, training and skills development is also required for research management staff tasked with ensuring that competitive grant proposals comply with the funding criteria. It would also be advisable for research management staff to participate in proposal-writing training so that they become familiar with the fundamentals of successful grantsmanship and are equipped to vet and advise on research funding proposals. The experience of the NRF is that strong institutional research management functions and research officers who are skilled and well-informed make a significant difference to the peer-review process and the success of grant applications. It was noted within the ACU/NRF African peer-review seminar that it is of critical importance to develop that level of structural and managerial organisation within institutions wanting to apply for competitive research funding.

## Internal peer review

Related to the questions of vetting and training is that of internal peer review (i.e. institutional peers assessing proposals for the internal allocation of research funds). UCT indicated that the distribution of internal research funds among faculties is conditional on peer review. Most institutions consulted indicated that they have some form of standing research committee that assesses research proposals for the internal distribution of funds. In some cases the committees are convened at regular intervals, in others committees are convened on an ad hoc basis.

In most cases staff from all faculties are represented on the research committee/board. These committees tend to have executive authority to approve or reject internal proposals, or at the very least, to make highly influential recommendations to the governing body responsible for approving these decisions. In some cases, internal proposals are in response to a specific call and in others, proposals can be submitted on an on-going basis. Peer review in the form of distributing proposals among colleagues who do not sit on a specially formulated committee was not much in evidence among the institutions consulted. This is unsurprising, given the unavoidable problems of conflict of interest that would arise.

### Box 9: Case study: internal peer review at North West University, South Africa

#### Context

North West University is the fourth largest university in South Africa, with roughly 55,000 enrolled students. Formed in 2004 through the merger of Potchefstroom University for Christian Higher Education and the University of the North-West (staff and students of the Sebokeng campus of Vista University were also incorporated), it has a central Research Support Office that co-ordinates research management across the institution.

Research at North West University is not organised along faculty or discipline lines. Their 'research entity' model organises research within the university along thematic lines. There are four categories of research entity: niche areas (with a particular focus on local research impact); focus areas (linked to national priorities with regional research impact); unit (linked to national priorities with national research impact); and finally, centres of excellence (ideally multi-disciplinary and linked to national priorities with international research impact). Currently there are 7 niche areas; 3 focus areas; 11 research units and 1 centre of excellence. Funding for niche areas is primarily internal/core; for the other categories at least 50% of funding must be obtained from external sources.

#### Internal peer-review process – new research entity

A potential new entity applies for recognition by submitting a research proposal and strategic plan. In the proposal, they must indicate how their proposed research aligns with the various criteria for different entity types, as outlined above.

#### Who reviews

The Research Support Commission is primarily responsible for the review, sometimes with on-request support from subject-related experts on the quality and viability of the research plan.

The Commission comprises:

- A chairperson appointed by Senate.
- Four senior members from the ranks of researchers with a proven track record in the field of the social sciences and humanities (preferably NRF-evaluated researchers and researchers with experience in the evaluation of research).
- Four senior members from the ranks of proven researchers in the natural sciences and engineering (preferably NRF-evaluated researchers and researchers with experience in the evaluation of research).
- An outside member can, as required, be co-opted.
- The Director of Research Support, who acts as secretary.
- Further appointments can be made in senior researcher categories to ensure representation of all campuses.

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### **Internal peer-review process – individual proposals**

These must align with the broad proposal and plan for the research entity.

### **Who reviews**

Each research entity has a Research Director who ensures alignment between the proposal and the entity. The faculty in which the entity primarily resides will also have a research committee who will also check for quality and alignment.

### **Decision-making**

While the Research Support Commission and research committees are responsible for reviewing research, they are advisory rather than decision-making bodies. Decisions regarding the allocation of funds fall to the Institutional Committee for Research and Innovation, a sub-committee of the Senate, which makes recommendations to the Senate. Its remit extends beyond the approval of research entities and proposals to cover the broader research management function and strategy of the institution.

### **Funding**

Internal funds for research are shaped by a funding formula imported from the South African Department of Higher Education and Training, which factors research outputs into its distribution of higher education funding. The internal allocation of funding across institutional management units also factors in research outputs. All outputs of a particular entity are therefore monitored, and on the basis of this output, an allocation of funding is done within the annual budgeting process.

## **Box 10: Case study: internal peer review at the Institute of Professional Studies, Ghana**

### **Context**

Established as a tertiary institution in 1999 and as a public university in 2008, the Institute of Professional Studies is a medium-sized specialist institution with a student body of over 7,000 and staff numbering just over 300. It provides both academic and professional training, specialising in the areas of business, management, accountancy and other related subjects. It is currently seeking to expand its academic programmes as well as its research profile. Currently, around 60% of research funding is obtained from external sources.

### **Internal peer-review process – summary**

Research calls are made once a year. They are devised by working groups (research proposal assessment teams) on the basis of the institution's research policy and are distributed to all staff through the departments and faculties. Interested staff can respond to the call by submitting research proposals to the editorial board, which assesses the proposals and puts forward recommendations to the Research Committee. The Research Committee takes the final decision and monitors the progress of the research.

### **Who reviews**

Initial assessment is undertaken by the editorial board, using a double-blind process (see challenges below). The editorial board is made up of the Dean of Research and Graduate Studies; the Co-ordinator of Research; two members from the English department, one research fellow and one representative from the Academic Board.

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#### **Assessments are based on the following guidelines:**

- Enhancement of the Institute's research profile.
- Relevance to teaching and learning.
- Novelty and contribution to management and business practices.
- Extent to which results and dissemination of results uniquely differentiates the institute from its competitors.
- Ability to attract future external funding.
- Quality and excellence in scholarship.

#### **Decision-making**

Final decisions are made by the Research and Conferences Committee, which is a standing committee of the Academic Board. Members of the committee include the Rector of the Institute; the Dean of Research and Graduate Studies; the Co-ordinator of Research, two members nominated by the Academic Board, a member from each faculty and the librarian. The committee meet twice a semester and responsibilities include:

- Determining the general policy on research.
- Setting the research priorities and considering the general research needs of the faculties.
- Co-ordinating and managing all institutional research, research projects, students' research and publication of research outputs.
- Advising on the allocation and disbursement of funds for research and monitoring periodic reports on the expenditure of funds and the progress of research projects.
- Seeking grants for research.
- Reviewing all external research proposals before submitting them on behalf of the school to ensure that they are in line with basic standards.
- Monitoring and reporting on the status of research.

#### **Funding**

Funds for research are generally sourced from government subventions, the GET fund, internally generated funds and other donor and grant sources. Currently all internal funding for research is distributed on a competitive basis.

#### **Challenges**

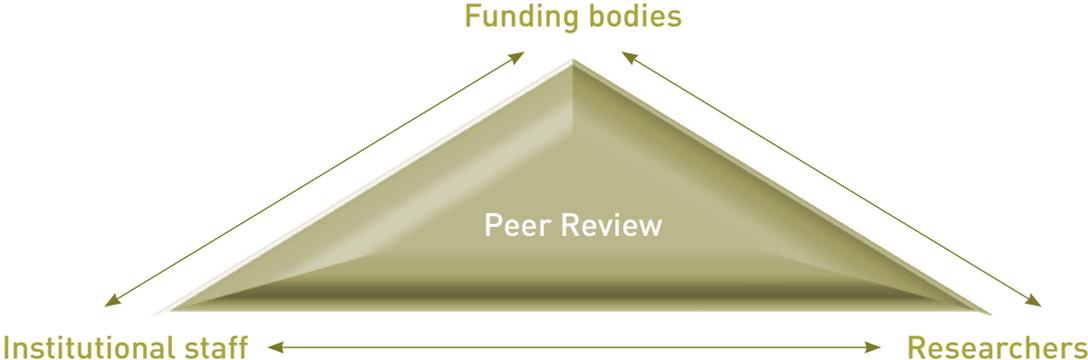
The main challenge identified is the double-blind process. With awareness of who sits on the committees this rarely works and members of staff will often know who has reviewed their proposals, which can lead to staff resentments when proposals are not successful or papers are not accepted for the institute's academic journal.

## **Role of universities in incentivising and supporting peer review**

It was emphasised by the UCT delegate at the NRF-ACU hosted seminar that peer review encourages researchers to see themselves as part of an academic community in which peer reviewing for journals and grant organisations is a professional obligation that can enhance one's research profile. In recognition of this, UCT provides seminars on how to conduct reviews as well as on how to write and publish articles. While UCT provides a notable example of an institution encouraging its staff to act as peer reviewers, it is important that not only big, research-intensive and relatively well-resourced institutions are in a position to develop capacities and systems in this area. Funding bodies have a role

to play in supporting smaller and more poorly resourced institutions, perhaps in collaboration with other institutions, to develop their systems for training and developing the future pool of peer reviewers.

**Figure 2: Triangulation for successful peer review**



Delegates agreed that higher education institutions are a critical part of cultivating the slightly nebulous concept of a ‘culture’ of peer review. Not only can they explicitly encourage participation through formal recognition in performance and promotion criteria, they can also instil the culture within the institution through their training and support mechanisms, through ensuring protected time as well as through the development of robust internal processes of peer review. As noted above, a key but very under-developed aspect of strengthening peer-review systems is the cultivation of a strong, triangular relationship between institutions, researchers and funding bodies (see Figure 2). All three groups are needed to create a robust system of peer review and each group has a vested interest in working together to achieve this goal.

## 5. Key points for further discussion

This section summarises some of the main discussion points raised in the paper, addressing ways of enhancing the role and effectiveness of peer review in Africa.

### Collaboration

- The challenges related to limited pools of willing and able peer reviewers, the lack of collaboration between different funding bodies and uneven experience in running competitive research funding schemes across the continent, make a strong case for promoting better inter- and intra-national co-ordination and collaboration in peer review mechanisms.
- Funding bodies should engage in dialogue around the forms in which collaboration would provide a viable and productive solution to some of the challenges of peer review. While ad hoc arrangements such as meetings, workshops and study tours can be organised between funding bodies, more structured and systematic approaches might result in more sustainable and beneficial collaborations. One suggestion for a more systematic approach is the development of regional or a pan-African peer-review college. This would require detailed discussion of questions around form, function, cost and resources, as well as who would lead such an initiative and the extent to which the costs and benefits of such a college might be unevenly spread across participating bodies.
- The concept of collaboration should extend beyond Africa to consider existing and potential areas of co-operation with funding bodies outside of the continent, as well as ways of sharing expertise, systems and processes, and developing database exchange arrangements.
- Collaboration can also be supported through funding instruments, earmarking support for proposals that involve regional (inter-African) collaboration and enhance regional capacity development. The possibility of joint awards between funding bodies could be further investigated.

### Conditionality on PhDs and grant recipients to boost supply of peer reviewers

- With government policy support, training for peer review could be embedded in PhD programmes. This would serve to:
  - train the emerging cadre of academic staff in the skills required for peer review;
  - inculcate a culture of peer review among newly qualified PhDs; and
  - give students valuable insight into the proposal writing and reviewing process.Key questions for discussion would be the logistical viability of such a course across PhDs; in particular, who would devise the course and how generalisable and scalable such training would need to be.
- Another option, often used by funding bodies elsewhere, is to attach a condition on successful grantees (whether for scholarships, fellowships or research projects) to commit to serve as future peer reviewers for a minimum number of proposals. This might not be enforceable once the funds have been dispensed but will serve to obtain an initial commitment in principle from the award holder. It could also be incorporated into the eligibility criteria of future grant applications.

### Engagement between funding bodies and institutions

- One of the issues that emerged clearly from this paper is the need for funding bodies to engage with

institutions, in particular their research management functions, to support their capacity to generate and sustain strong and viable research proposals.

- From the funding bodies' perspective, interaction with institutions might include training, consultations, secondments and shadowing, policy review, surveying, information sessions and the provision of institutional capacity-building grants. From the institutional perspective, this might involve working more closely with funding bodies to vet proposals, acting more proactively to inform funding policy, secondments and shadowing, ensuring that information from the funding bodies is effectively disseminated among all relevant staff and working with funding bodies to ensure that the infrastructural requirements to manage research grants are in place.

### **Key areas for improving efficiency**

- Take steps to achieve more effective vetting by institutions.
- Establish virtual panels, which might also help eliminate some of the expense and logistical problems of recruiting international reviewers.
- Increase the number of panel-only assessments.
- Reduce the number of remote reviews and single-person reviews for smaller awards.
- Use workshop selection (the 'sandpit model').

These are a selection of some of the suggestions for greater peer-review efficiency, but as with all efficiency measures they need to be fit-for-purpose and balanced against the associated risks.

### **Institutional initiatives**

- Provide training in grantsmanship for academic and research management staff.
- Provide training in grant-management and financial management for support staff.
- Establish protected time for grant-proposal writing and for peer-review activities.
- Ensure the provision of protected time for academics serving as peer reviewers.
- Include peer-review activities as criteria in promotion and performance assessments.
- Generate a database of academic staff and their research specialisms for use by funding bodies.

The discussion points above are designed to provide a point of departure for further examination of how African countries can effectively respond to a more competitive environment for research funds. This is a critical issue for universities and their staff, as well as for those who fund research. Finding ways to bring these groups together in an effort to improve research potential and quality must be an important component of any attempt to address the challenges of research capacity and obstacles to research production in Africa.

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### Appendix A: Selected examples of African-led competitive grant programmes

#### Box 11: Outline of peer-review process for selected competitive grant programmes

##### The Consortium for National Health Research (CNHR), Kenya

The Research Leadership Grants are provided to senior and junior (emerging) researchers. The maximum award is in the region of US\$300,000.

1. Applications are submitted and vetted for eligibility. In 2009, 47 applications were received (80% from senior researchers); of these, 39 were submitted for external review for six awards.
2. The proposals are subject to three external assessments. External assessors are drawn from the External Scientific Advisory Committee (ESAC) comprising 12 members. Each reviewer was asked to review 10–11 applications.
3. Members of the ESAC meet in Nairobi (subject to availability) to conduct interviews of short-listed applicants.
4. Sixteen applicants were interviewed. The scoring system was based on:
  - Personal attributes, capabilities and qualifications.
  - Project attributes (scientific quality and feasibility).
  - Plan for building capacity.

Weaknesses identified in the proposals were that the design of the proposed project was experimental and high risk, and that budget allocations were poorly justified. The majority of applications were from research institutes, notably the Kenya Medical Research Institute (KEMRI), which was the lead institution in four of the six successful proposals. No research leader from any of the public universities featured among the top six who received an award. This raised questions about the ability of non-specialist public institutions to develop and support strong proposals.

The recommendations of the ESAC following the first round of awards was that concept notes should be received before inviting full proposals and that successful applicants of the concept-note stage might need additional training in proposal writing (this has since been applied); that targeted proposal calls should be used to broaden the thematic focus of proposals; and that the duration of calls should be longer than six weeks in order to provide sufficient time to put together proposals and work with multi-disciplinary and multi-institutional teams.

##### Health Research Capacity Strengthening Initiative (HRCSI), Malawi

The HRCSI is a five-year programme aimed at building health research capacity in Malawi through research grants and training. The assessment of applications for their research grants is a multi-stage process:

1. Applicants submit a concept note which is screened by HRCSI staff. Junior researchers whose applications are successful are then invited to attend a five-day proposal development workshop, to develop a full, fundable proposal. Senior researchers whose concept notes are shortlisted move on to develop a full proposal independently.
2. Full proposals are screened in-house, based on compliance with eligibility criteria.
3. Short-listed proposals are sent to three external reviewers.
4. Instead of convening a panel to adjudicate on the external reviews, scientists from the Medical Research Council are invited to make a decision on proposals.
5. Where proposals are assessed positively, but amendments suggested, applicants are asked to revise proposals in accordance with those suggestions, unless they can provide empirical evidence as to why they should not do so.
6. Once revised, proposals are resubmitted to the HRCSI, for final consideration by the Medical Research Council representatives, who make the final funding decisions.

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## Regional Universities Forum for Capacity Building in Agriculture (RUFORUM)

RUFORUM is a consortium of 29 universities in eastern, central and southern Africa. It is registered as an international NGO in Uganda. RUFORUM's mission is to strengthen the capacity of universities to foster innovative responses to the demands of smallholder farmers through a competitive grants scheme directed at academic training, research, and collaboration between researchers, farmers, agricultural research institutions and governments. The scheme operates in close collaboration with institutions and, through their institutional strengthening grants, specifically targets new member institutions, women principal Investigators and institutions that have previously received no or few awards.

The two main grants are the Graduate Research Grants (GRG) and the Community Action Research Programme (CARP) grants. The former are two-year grants of up to US\$60,000 and are awarded to senior lecturers to support agricultural research and the training of two graduate students. The latter (fewer in number, with three awarded in 2010) are more substantial grants of up to US\$300,000 over three years and typically include the training of at least one doctoral and two MSc students.

Successful proposals come almost exclusively from the stronger, more established institutions in its network. Thirteen of the 25 institutions submitted a total of 110 proposals and of these, 75 were from five universities. One of the possible factors underlying this uneven spread was weak internal capacities in proposal writing and scientific communication. Actions designed to improve representation will include training workshops and support for joint proposals between institutions with different capacities. Institutional strengthening grants have been developed to encourage non-participating universities to apply. Examples of successful proposals will also be made available for reference. The grant awarding process is as follows:

1. Concept notes for CARP awards are submitted. Shortlisted applicants are invited to submit full proposals. GRG proposals can be submitted without a concept note.
2. Full proposals are submitted for internal review within the university and only once it receives institutional approval can it be submitted to the RUFORUM Secretariat.
3. Following an internal compliance review, proposals are sent to external reviewers.
4. These assessments are passed on to the RUFORUM technical review committee who make the final decision on awarding the grants.

## National Research Foundation (NRF), South Africa

The NRF was established in 1998 to support and promote research in South Africa. Its strategic plan specifies that grants must be awarded on a competitive basis; they should be based on merit and assessed by peer review, and the award process should be seen to be fair, accountable and transparent. The projected budget for the 2011/12 budget for the NRF is R1.089 billion (US\$137.5 million), an increase of R144 million from the 2009/10 budget of R945 million. The NRF is the biggest continental research funding agency. The peer-review process generally comprises four stages:

1. Submission of application/proposal;
2. Subject specialist peer reviewers invited and proposals distributed for postal review;
3. Moderation and adjudication by appointed research panels;
4. Decision-making and approval by senior NRF officials, based on the recommendations of the panels.

## Tertiary Education Trust Fund; Research Fund, Nigeria

Under the aegis of the Tertiary Education Trust Fund in Nigeria, the Research Fund was established to revitalise research in Nigerian tertiary institutions. Three billion naira (about US\$19 million) was allocated to the fund in 2009. However, there are no timelines attached to the disbursement of the fund and only a vague commitment to replenish it when it is exhausted. The process for allocating the funds is as follows:

1. Research fund applications are submitted.
2. The Screening and Monitoring Committee (there are three for different research categories) recommends peers in relevant disciplines to review applications. The fund prioritises research in a range of areas of national interest and also places a premium on research that is multi-disciplinary. The reviewers as well as the committee must determine whether the proposed research aligns with these objectives.
3. On receipt of the peer reviews, the screening and monitoring committees make recommendations to the Board of Trustees.
4. The Board of Trustees makes the final decision on funding awards.

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## African Union Research Grant Programme

The AU Research Grant Programme is designed to ensure the contribution of science and technology to sustainable development. Its objectives are to support the capacity of the AU to operate a pan-African research framework, to build research capacity in Africa and to enhance intra-regional scientific collaboration. Areas of focus for 2011, for example, were: post-harvest and agriculture, renewable and sustainable energy, and water and sanitation. Implementation is through partnerships of regional, sub-regional, and inter-institutional co-operation. Seven million euro was allocated in the first call. The review process is as follows:

1. A concept note and the full proposal are submitted together.
2. The evaluation process is carried out by independent experts chosen by the African Union Commission (AUC):
  - AUC staff verify the eligibility of the proposal.
  - After a confidential evaluation of the concept notes, further sifting is undertaken and then full proposals are evaluated by independent scientific experts. The evaluation considers financial and operational capacity, relevance, effectiveness and feasibility, sustainability, and budget and cost-effectiveness.
  - AUC staff do an initial ranking of proposals, factoring in the reviews, and draft a shortlist.
  - The shortlist is vetted by the Advisory Management Committee (a permanent body) comprising scientific and research experts from the five African regions, who examine the evaluation process, discuss the results and provide an opinion on the shortlist.
  - The final selection is presented to the African Ministerial Council on Science and Technology for approval.
  - The Director of the Department of Human Resources, Science and Technology communicates the results of the evaluation and the funding decision to the proposal co-ordinators.

This full procedure takes approximately six months to be completed starting from the proposal submission deadline.

## European and Developing Countries Clinical Trials Partnership (EDCTP)

All proposals are subject to peer review by external, remote reviewers and the project-specific Scientific Review Committee. Reviewers are drawn from a list of European and African academics from institutions in the partner countries. Applicants are given the right to reply to the comments of external reviewers before being considered by the Committee. Recommendations are discussed by the EDCTP Board with final decisions made by the EDCTP General Assembly. The aim of the grants is to facilitate and strengthen the mechanisms for achieving high-quality clinical research outcomes.

## National Science and Technology Council; Science and Technology Development Fund, Zambia

The Council, established through the Science and Technology Act No. 26 of 1997, constituted a Science and Technology Development Fund (STDF). This fund aims to support R&D projects that can generate new knowledge in basic and applied sciences and develop new products or processes necessary for further development and commercialisation in specific research areas. It also aims to generate more research capability and expertise in Zambia.

### Objectives

- To provide resources to R&D institutions, researchers and scientists to facilitate and encourage them undertake research;
- To provide resources for capacity building in the development and application of science and technology.

The fund supports research projects that:

- Contribute to the attainment of the objectives of the Fifth National Development Plan (FNDP), the Millennium Development Goals (MDGs) and/or the Vision 2030.
- Promote innovativeness, value addition to natural resources and the integration of locally produced technologies in the Zambian industrial sector.
- Are undertaken by postgraduate students.

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Public and private research and development (R&D) centres/institutions, individual researchers and postgraduate students undertaking research in Zambia are eligible to access the STDF on competitive basis. Grants of up to K150,000,000 (about US\$30,000) may be allocated, per proposal. The fund also provides support in the form of equipment and or materials to enhance capacity of R&Ds to carry out research.

The review process is as follows:

- Applicants submit research proposals.
- Proposals are appraised by the respective Technical Committees, who refer proposals to referees for review.
- Technical Committees recommend selected proposals to the respective Fund Management Committees for final assessment and approval.
- Applicants whose research proposals are approved are attached to institutions of affiliation, which are established, recognised R&D centres and institutes of higher learning tasked with overseeing the project.

### **National Science and Technology Council: Strategic Research Fund, Zambia**

This fund aims to encourage special initiatives in scientific research and technological development and commercialisation of technology. The review process is the same as that described above for access to the STDF, but the potential scope of funding is far higher – up to K500,000,000 per proposal (about US\$100,000).

## Appendix B: Selected list of African-based and African-focussed health research funding agencies

Produced by ESSENCE on Health Research initiative<sup>8</sup>

Organisation name	Country	Type of organisation	Sector	Supportive functions/ Expenditure
Ministry of Health, Population and Hospital Reform	Algeria	Government ministry	Health or medicine	<i>No research support function specified</i>
Agence Nationale pour le Développement de la Recherche en Santé (ANDRS)	Algeria	Government administrative establishment	Health or medicine	Support the implementation and realisation of the national health research programme through funding of selected research projects
Ministry of Health	Benin	Government ministry	Health or medicine	<i>No research support function specified</i>
Institut Régional de Santé Publique (IRSP)	Benin	Semi-public or parastatal	Health or medicine	In partnership with the Université Libre de Bruxelles, the FORESA project awards three prizes valued at FCFA2,000,000; FCFA1,000,000 and FCFA500,000 (February 2009)
Ministry of Health	Botswana	Government ministry	Health or medicine	Undertakes development and implementation of policies and standards
Ministry of Health	Burkina Faso	Government ministry	Health or medicine	Responsible for the promotion of medical research including research in traditional medicine
Ministry of Secondary and Higher Education and Scientific Research (MESSRS)	Burkina Faso	Government ministry	Science and technology	Offers scholarships, financial assistance and loans for higher education
Centre National de la Recherche Scientifique et Technologique (CNRST): Institut de Recherche en Sciences de la Santé (IRSS)	Burkina Faso	Research institute governed by a scientific council which is chaired by the director general of the CNRST	Health or medicine	Mission includes assisting in formulation of development policies and research and co-ordinating programmes of national and regional research
Centre Muraz	Burkina Faso	Research institute	Health or medicine; biomedical research centre	Main objectives include promotion and harmonisation of basic research in communicable diseases

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<sup>8</sup> Reproduced here with permission. ESSENCE on Health Research initiative (Enhancing Support for Strengthening the Effectiveness of National Capacity Efforts) aims to provide a collaborative framework for funding agencies to address health research capacity needs in Africa by working on ways to adapt the principles of the Paris Agenda and Accra Plan of Action on Aid Effectiveness. ESSENCE on Health Research Secretariat is hosted at the Special Programme TDR of the World Health Organization (WHO).

Organisation name	Country	Type of organisation	Sector	Supportive functions/ Expenditure
The West African Health Organisation (WAHO)	Burkina Faso	Specialised agency of the Economic Community of West African States (ECOWAS/CEDEAO); reports to the governments of member states and is supported by a mixture of public, private and philanthropic funding sources	Science and technology, including health and medicine	Targets capacity building; the collection, evaluation and dissemination of information; promoting co-operation and co-ordination; exploitation of information technologies
Ministry of Public Health	Burundi	Government ministry	Health or medicine	<i>No research support function specified</i>
Observatoire National des Ressources Humaines pour la Santé du Burundi (ONRHS)	Burundi	National network	Health or medicine	Contributes to the development, implementation, monitoring and evaluation of policies, plans and programmes in human resources in health
Ministry of Higher Education (MINESUP)	Cameroon	Government ministry	Science and technology	CFA7 billion in total annual funding
Ministry of Scientific Research and Innovation (MINRESI)	Cameroon	Government ministry	Science and technology	The minister is responsible for the facilitation, co-ordination and control of scientific research
University of Buea	Cameroon	Governance involves structures such as Council, Senate, Congregation and committees representing student and staff	Science and technology	Awards small grants for faculty research
Cameroon Academy of Sciences	Cameroon	Research institute	Science and technology	Seven research excellence prizes awarded to young scientists in collaboration with The Academy of Sciences for the Developing World (TWAS), MINRESI and MINESUP
Institute of Medical Research and Medicinal Plants Studies (IMPM)	Cameroon	Research institute reporting to a government ministry	Science and technology including health or medicine; medicinal plants and traditional medicine	
Ministry of Public Health	Chad	Government ministry	Health or medicine	<i>No research support function specified</i>
Ministry of Public Health	Democratic Republic of the Congo	Government ministry	Health or medicine	<i>No research support function specified</i>
Centre d'Études et de Recherche de Djibouti (CERD)	Djibouti	Government administrative establishment attached to the Ministry of Presidential Affairs and Investment Promotion	Science and technology; five institutes: earth sciences, life sciences, social sciences, languages and technology	Provides researchers with grants and administrative support

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Organisation name	Country	Type of organisation	Sector	Supportive functions/ Expenditure
Cairo University and UNDP 'MDG Awareness Initiative in Cairo University'	Egypt	Public university	Aims to introduce prominent and innovative applied solutions that serve attainment of the MDGs	LE500,000 in total annual funding (2011)
The Organization for Social Science Research in Eastern and Southern Africa (OSSREA)	Ethiopia	Non-governmental and non-profit research network	Social sciences	Run annual research-grant competitions
African Network for Drugs and Diagnostics Innovation (ANDI)	Ethiopia	International network	Health or medicine; health product innovation	Promote and sustain African-led product R&D innovation; also support capacity and infrastructural development
Centre International de Recherches Médicales de Franceville	Gabon	Research institute; semi-public or parastatal governed by a board of directors	Health or medicine	Young Researchers' Awards: two prizes valued at €5,000 each
The International Network for the Demographic Evaluation of Populations and Their Health in Developing Countries (INDEPTH)	Ghana	Global network governed by a board of trustees who report to the chair or executive director to the General Assembly	Health and demographic data and research	Objectives include to support and strengthen the ability of INDEPTH sites to conduct longitudinal health and demographic studies, and to facilitate and support research capability strengthening relevant to INDEPTH activities
Council for Scientific and Industrial Research (CSIR)	Ghana	Research council	Science and technology in agriculture, industry, health and the environment	Mandate includes to encourage the training of scientific personnel and research workers through the provision of grants and fellowships
Ghana Academy of Arts and Sciences	Ghana	Research council	Arts and sciences	Awards a number of prizes each year for undergraduate students and senior scholars in recognition of contribution to knowledge
Consortium for National Health Research (CNHR)	Kenya	Private foundation, NGO	Health or medicine	Total annual funding of £2.5 million, of which 50% is disbursed through competitive granting
Kenya Medical Research Institute (KEMRI)	Kenya	State corporation that reports to a government ministry	Health or medicine	<i>No research support function specified in mandate</i>
National Council for Science and Technology (NCST)	Kenya	Advisory institution to the government on matters of science and technology; research council	Science and technology	Mandate includes to co-ordinate and promote research; functions include advising on scientific research technology funding

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Organisation name	Country	Type of organisation	Sector	Supportive functions/ Expenditure
Ministry of Higher Education, Science and Technology	Kenya	Government ministry	Science and technology	The Directorate of Research Management and Development mobilises resources to support the STI sector
African Technology Policy Studies Network (ATPS)	Kenya	Multi-disciplinary network of researchers, practitioners and policymakers that promotes STI for African Development	STI knowledge generation, brokerage, dissemination and outreach, and policy advocacy	Organises and implements STI capacity-building programmes at regional and national levels
African Medical and Research Foundation (AMREF)	Kenya	International African organisation governed by a board of directors	Health or medicine	Three programme themes: Community Partnering for Better Health, Health Systems and Policy Research and Capacity Building
National Research Council of Malawi (NRCM)	Malawi	Public agency	Science and technology	To date, the Council has funded 33 demand-driven projects
Centre National de la Recherche Scientifique et Technologique (CNRST)	Mali	Public establishment of science and technology	Science and technology	Promote and mobilise funding for scientific and technological research
L'Institut National de Recherche en Santé Publique (INRSP)	Mali	Government administrative establishment	Health or medicine	Promote medical and pharmaceutical research in public health
Ministry of Health and Quality of Life	Mauritius	Government ministry	Health or medicine	<i>No research support function specified</i>
Mauritius Institute of Health	Mauritius	Parastatal body under the Ministry of Health and Quality of Life	Health or medicine	Carry out training and research activities in the health sector
Ministry of Higher Education, Professional Training and Scientific Research	Morocco	Government ministry	Science and technology	Promote fundamental and applied scientific research
Ministry of Health	Morocco	Government ministry	Health or medicine	<i>No research support function specified in mandate</i>
Ministry of Health	Mozambique	Government ministry	Health or medicine	<i>Website in Spanish</i>
Ministry of Science and Technology	Mozambique	Government ministry	Science and technology	<i>No research support function specified</i>
Regional Centre for Health Development (CRDS)	Mozambique		Health or medicine	<i>Website not found</i>
Ministry of Health and Social Services	Namibia	Government ministry	Science and technology	Survey planned to collect data on research expenditure
National Institute for Pharmaceutical Research and Development (NIPRD)	Nigeria	Parastatal research institute under the Federal Ministry of Science and Technology	Pharmaceuticals	Promote and sponsor staff development and the local development and production of drugs, vaccines, pharmaceutical machinery, devices and accessories

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Organisation name	Country	Type of organisation	Sector	Supportive functions/ Expenditure
Nigeria Natural Medicine Development Agency	Nigeria	Parastatal of the Federal Ministry of Science and Technology	Health or medicine	<i>No research support function specified in mandate</i>
Raw Materials Research and Development Council (RMRDC)	Nigeria	Parastatal research council; agency of the Federal Government of Nigeria	Science and technology (industry)	Promote the development and utilisation of Nigeria's industrial raw materials
Centre for Health Data and Research (CHDR)	Nigeria	NGO	Health or medicine	Promote public health through quality data, information and research in Nigeria
Federal Ministry of Health	Nigeria	Government ministry	Health or medicine	<i>No research support function specified</i>
Federal Ministry of Science and Technology	Nigeria	Government ministry	Science and technology	Responsible for the promotion and co-ordination of scientific and technological research and capacity building
Ministry of Health	Rwanda	Government ministry	Health or medicine	One of the ministry's main objectives is to strengthen national referral hospitals, treatment and research centres
Ministry of Health	Sao Tomé and Príncipe	Government ministry	Health or medicine	<i>Website in Spanish</i>
Committee on Health Research	Sao Tomé and Príncipe		Health or medicine	<i>Website not found</i>
Ministry of Health and Prevention	Senegal	Government ministry	Health or medicine	<i>Cannot access expenditure information on website</i>
Academie Nationale des Sciences et Techniques du Senegal (ANSTS)	Senegal	Research council reporting to a government ministry	Science and technology	Objectives include encouraging scientific research and promoting research results
Council for the Development of Social Science Research in Africa (CODESRIA)	Senegal	Independent, pan-African research council	Primary focus on social sciences, broadly defined	Promote and facilitate research and knowledge production in Africa
Ministry of Health and Sanitation	Sierra Leone	Government ministry	Health or medicine	<i>No research support function specified in mandate</i>
Ministry of Health	Somalia	Government ministry	Health or medicine	<i>Information not available</i>
Council for Scientific and Industrial Research (CSIR)	South Africa	Semi-public/parastatal research council	Science and technology	Annual funding total of US\$200 million, of which 40% is parliamentary and disbursed within CSIR competitively (US\$80 million)
Department of Science and Technology (DST)	South Africa	Government department	Science and technology	<i>No research support function specified</i>
National Research Foundation (NRF)	South Africa	Research council; independent government agency	Science and technology	Promotes and supports research in all fields of knowledge; incorporated the former CSD, HSRC and FRD funding agencies

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Organisation name	Country	Type of organisation	Sector	Supportive functions/ Expenditure
Medical Research Council (MRC)	South Africa	Semi-public/parastatal research council which reports to a government ministry	Health or medicine	Total annual funding of R512,165,737, of which 55.3% (R283,000,000) in total contract revenue was disbursed through competitive granting – April 2009 to March 2010
Technology Innovation Agency (TIA)	South Africa	Public entity governed by a TIA board	Science and technology	Aim to enhance the country's capacity to translate a greater proportion of R&D into commercial products and services
Department of Health	South Africa	Government ministry	Health or medicine	<i>No research support function specified</i>
Human Sciences Research Council (HSRC)	South Africa	Research council governed by an HSRC board which reports to a government ministry	Health or medicine; human and social development	<i>Incorporated into the National Research Foundation in 1998</i>
Federal Ministry of Health	Sudan	Government ministry	Health or medicine	<i>No research support function specified</i>
Commission for Science and Technology (COSTECH)	Tanzania	Parastatal organisation; chief advisor to the government on science and technology matters	Science and technology	Responsible for co-ordinating and promoting research and technology development activities
African Field Epidemiology Network (AFENET)	Tanzania	Parastatal private foundation; non-profit organisation that works with Ministries of Health in Africa	Health or medicine	Run residency-based programmes in applied epidemiology and laboratory practice
National Institute for Medical Research (NIMR)	Tanzania	Research institute; parastatal under the Ministry of Health	Health or medicine	To carry out and promote the carrying out of medical research
Ministry of Health	Uganda	Government ministry	Health or medicine	<i>No research support function specified</i>
Uganda National Council for Science and Technology (UNCST)	Uganda	Research council; government agency under the Ministry of Finance Planning and Economic Development	Science and technology	Lead the development, promotion and application of science and technology; Millenium Science Initiative (MSI) project; competitive grants (US\$50,000 and US\$150,000 in 2007)
Uganda National Health Research Organisation (UNHRO)	Uganda	Autonomous research council	Health or medicine	<i>No website found</i>
Ministry of Health	Zambia	Government ministry	Health or medicine	<i>No research support function specified</i>
National Science and Technology Council (NSTC)	Zambia	Statutory body through which the government directs policy on the development and application of science and technology in the country	Science and technology	Competitive grants: the Science and Technology Development Fund (up to ZK150 million per proposal); the Strategic Research Fund (up to ZK500 million per proposal); the Youth Innovation Fund (up to ZK150 million per proposal)

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Organisation name	Country	Type of organisation	Sector	Supportive functions/ Expenditure
Ministry of Health and Child Welfare	Zimbabwe	Government ministry	Health or medicine	<i>No research support function specified</i>
Medical Research Council of Zimbabwe (MRCZ)	Zimbabwe	Specialised Council of the Research Council of Zimbabwe (RCZ) established and supported by the government through the Ministry of Health and Child Welfare	Health or medicine	Mandate to co-ordinate and promote health and medical research; collect funds for the promotion of medical research in Zimbabwe <i>but not specified if the council is responsible for disbursing funds</i>

### International health research funding agencies

Organisation name	Country	Type of organisation	Sector	Supportive functions/ Expenditure
European and Developing Countries Clinical Trial Partnerships (EDCTP)	The Netherlands; South Africa	Semi-public/parastatal organisation	Health or medicine	Annual funding of €35,591,000; completely disbursed through competitive granting
National Institutes of Health (NIH)	The United States of America	Government ministry/ department; Research Institute	Health or medicine	Annual funding of US\$600 million (2005), the majority of which is disbursed through competitive granting
CNRS University Montpellier 2	France	Research institute reporting to a government ministry	Science and technology	Annual funding of €400 000, 80% of which is disbursed through competitive granting
The Academy of Sciences for the Developing World (TWAS)	Italy	Autonomous international organisation governed by an elected council	Science and technology	Promote scientific excellence and capacity in the South for science-based sustainable development

## Appendix C: Financial and grants management workshop for CNHR grantees

Day 1
<b>Introductory session</b>
Arrival and registration of participants
Word of welcome and introductions
Research Leadership Grants and Centre(s) of Research Excellence concept
<b>CNHR grant management</b>
Grant terms and conditions
Sharing of experiences with CNHR grants CNHR experiences in managing grants
Planning and budgeting <ul style="list-style-type: none"><li>• Overview (35 mins)</li><li>• Group work – breakout (35 mins)</li><li>• Feedback – Plenary (20 mins)</li></ul>
Tracking performance (institutional monitoring of internal progress), and variance analysis <ul style="list-style-type: none"><li>• Overview (20 mins)</li><li>• Variance analysis (20 mins)</li><li>• Case study of variance analysis (30 mins)</li><li>• Feedback and recap (20 mins)</li></ul>
Shared costs: CNHR, and contributions in kind among implementing institutions: Generic concepts CNHR experience
Recap Day 1
Day 2
<b>CNHR financial management</b>
Supporting documents
Allowable expenditure
Technical and financial reporting by lead and partner institutions <ul style="list-style-type: none"><li>• Technical reporting</li><li>• Financial reporting</li><li>• CNHR experience with reporting</li></ul>
Procurement and asset management
Monitoring <ul style="list-style-type: none"><li>• Post-award tools</li><li>• Audit</li></ul>
Recap Day 2
Closure and next steps Course evaluation

## About the author and the Association of Commonwealth Universities

The author, Jay Kubler, is Senior Research Officer at the Association of Commonwealth Universities (ACU).

The ACU's Research Management programme focusses on sharing best practice between universities, encouraging better communication between higher education and funding bodies, and providing basic materials for those with little or no tradition of research management to develop at least a basic capacity.

The ACU has more than a decade of experience working within the field of research management, and is at the forefront of the emerging discipline of research uptake management through the Development Research Uptake in Sub-Saharan Africa (DRUSSA) programme. Over 200 institutions from the Africa and Caribbean regions are represented on the ACU's Research Management network.

### Our role in the RIMI4AC project

In the RIMI4AC project, the ACU co-ordinates the work packages on capacity building and policy dialogue. Activities in these thematic areas include the establishment of regional research management associations in East and central Africa and in the Caribbean; conducting surveys on current research management practice and provision within the Africa and Caribbean regions; an international conference which brought together funders and research managers / administrators from African and Caribbean universities; and the production of a RIMI4AC project newsletter. Copies of the newsletter are sent to executive heads and research management offices (or equivalent) in universities in the Africa and Caribbean regions. The newsletter is published in both English and French.

## The papers in this series

As part of the RIMI4AC project, five papers were commissioned to help ensure that the work undertaken at institutional and regional level both reflects and feeds into wider policy debates. The papers are all available on the project website at <http://www.rimi4ac.net/en/>, and are listed below.

The papers in this series are:

### **IPR systems and technology transfer at research institutions in southern Africa**

Alphonsus Neba

### **Project management**

Karin Dyason and Jonathan Harle

### **Research contract management**

Gretha Cronje, Alweri Enslin, Sarita Groenewald, Cornelia Malherbe, Mark Mulder and Sinazo Peter

### **A case study on the state of research management in the Caribbean**

Tashoya Streete, Martin Henry, Paul Ivey, Gossett Oliver

### **Strengthening the mechanisms of competitive research funding and peer review in Africa**

Jay Kubler

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