

Managing research-related information in African universities

Policy and Programmes Unit

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Research information management is an area that is growing in importance. Just as it is necessary for universities to understand student information in order to attract and retain more students, understanding a university's research performance and strengths is becoming a necessary step – not just in attracting and determining future (research) business, but also in meeting the changing reporting requirements of research funders.

Research information is the term used to describe the administrative information surrounding the research outputs of an institution. This usually encompasses publications, projects, grants, and professional activities. Research information management systems help organisations make informed decisions about their research.

The imperative to better manage research-related information is increasingly coming to the fore, and is driven by a range of factors. These include:

- The increasing plethora and scale of research-related data being produced
- Trends towards collaborative research
- The growing range of media and milieu for research-related information
- The now iterative links between research performance and funding, and stronger accountability for funding once granted
- The demand from funders for more robust uptake (and evidence of uptake) of research from their funded programmes

Anecdotal evidence suggests that research management systems have developed without a coordinated approach¹. However, the factors listed above, as well as increasing collaboration,

regulation and complexity in the research area, require research information management systems to be flexible and to move towards greater coordination and interoperability. Increasingly, they must adopt metrics and reporting terminology that are recognisable to users of information outside that particular institution. Thus there is now a growing international movement towards the standardisation of research information through the development and adoption of a common 'data dictionary', the harmonisation of reporting requirements, and greater use of persistent identifiers of research and researchers.

This paper highlights some of the emerging issues for university researchers in Africa, as well as those funding research. The paper draws primarily on the proceedings of the Funders and African Universities Forum – a one-day roundtable event convened by the ACU in 2014. The event, supported by the Wellcome Trust, included representatives from 13 African universities and seven funding organisations. In addition, CASRAI² and ORCID³ provided an overview of current developments in the management of research information, describing moves towards the standardisation and harmonisation of research information and the adoption of a common 'data dictionary' that will streamline the sharing of information about researchers, research projects, and research reporting. This paper is also informed by ACU benchmarking events with African universities conducted in 2014.

¹ Imperial College London; JISC; Elsevier, *Developing tools to inform the management of research and translating existing good practice* (2010)

² CASRAI (The Consortia Advancing Standards in Research Administration Information) is a standards development organisation. It provides a forum and the mechanisms required to standardise the data that researchers, institutions, and funders must produce, store, exchange, and process.

³ ORCID is a community-based effort to provide a registry of unique researcher identifiers and a transparent method of linking research activities and outputs to these identifiers.

1. Identifying researchers, teams, and projects

1.1 Information about the individuals participating in a project and the projects individuals have taken part in

Issue: Universities and funders alike wish to measure the long-term impact of capacity-strengthening projects and investments in developing individuals. Researchers wish to identify potential collaborators, peer reviewers, or supervisors from outside their own personal networks.

Challenge: The level of information currently being recorded is often relatively poor and incomplete. While it is clear who the principal investigators (PIs) are, it is often not clear who other project participants are, what their relationship is to the project team, and whether project teams continue as research teams after a project ends.

The academic community is characterised by high mobility, yet institutions and funders rarely have mechanisms in place to keep track of researchers and project beneficiaries who move on to other institutions.

Options: Where possible, *websites* can be used to record information more effectively for this purpose. Funders can make it a project requirement for principal investigators to record on a webpage the names and details of all individuals involved in a project.

The use of *ORCID identifiers* can be an effective means of identifying and tracking individuals. Persistent identifiers for individual researchers can be linked to student and HR records, faculty information systems, repositories, records of awards, funding, and publications.

Researchers should be encouraged to maintain *academic links* beyond the life of a project. This should extend to links between postgraduates and doctoral students and their research supervisors.

1.2 Information about the research strengths of institutions

Issue: Universities are often viewed primarily through the lens of whether they are 'research-capable' or not, rather than what they are good at. Newer universities and universities with less of a research track record often struggle to gain recognition and attention from funders.

Challenge: Few universities are as good as they could be at identifying and advertising their respective strengths distinct from their capacity.

Options: Again, *websites* should be used more effectively to communicate research and project-related information. Universities should identify and advertise their respective strengths – for example, display information on centres of excellence – so that funders and other stakeholders are better informed.

Universities are encouraged to invest in *research management information systems* and to provide stronger incentives and encouragement for researchers to share information with the central office – such as by publishing *catalogues of research contributions* (see page 3). The use of ORCID identifiers would support this objective. Universities are also encouraged to *build research teams* within the university and to strengthen *links* with other universities in the same country.

1.3 Information on wider development activities funded by research funders

Issue: In order to strengthen research uptake strategies, universities are interested in knowing about wider development activities in their countries and how funders seek to coordinate these with their research activities.

Challenge: The level of and ease of access to information about funded development activities varies between different funders. Many researchers are unaware of how to access the information that is available.

Options: Research funders can do more to clearly articulate synergies between their development activities and their research agenda, and to help *facilitate interaction and exchange* between the development practitioners and the researchers they fund.

2. Managing and reporting projects

2.1 Reporting research activities to central university offices and funders

Issue: There are a wide range of institutional benefits to having centrally-recorded research-related information. Currently, this is most often used to inform senior institutional management (see Figure 2).

Challenge: Universities face numerous reporting requirements from various stakeholders, which vary in style (quantitative/qualitative) and the type of content to be included in reports. In addition, there is now greater interest and demand for quantitative style reports as quantitative information sets can be more easily assessed and compared with other similar information sets.

Many university researchers don't currently report their research activities to central university offices, or may prioritise their respective reporting responsibilities to external funders over their university. The reasons for this are many and include the high time commitment required to service multiple reporting demands in differing formats; a lack of awareness among principal investigators of the importance of institutional reporting; under-resourced central offices that are ill-equipped to support researchers to fulfil their reporting requirements; and researchers funding their activities 'out of pocket' or receiving funds for their activities directly from external sources (including via consultancies) that bypass official university structures.

Options: Greater use of **standardised reporting terminology** by both funders and universities can help to increase the ease and efficiency of research reporting. CASRAI is emerging as a leading initiative in the harmonisation of research reporting. The regional research, innovation and management associations can also play a role in helping to facilitate this process among their member universities.

Universities are encouraged to **provide training for principal investigators** to help with research reporting.

Universities may wish to consider publishing **catalogues of their research contributions**. Experience shows that individuals wish to be included in lists that acknowledge their work and their contribution both to their discipline and to their institution's portfolio of activities. Where such public and visible compilations exist, individuals are more likely to ensure that they submit their relevant information.

Research funders are encouraged to build upon some of the emerging initiatives to **harmonise reporting requirements**, and to recognise and

accept information prepared for other funding bodies. Examples of harmonisation work include NIH/FIC's efforts to build a universal reporting system that would cover all the agencies in the USA, or their work through the IERDA programme to help develop their institutional research grants information management systems. The Wellcome Trust currently has an agreement with the Gates Foundation to use/recognise Gates Foundation reports in some cases. It is important here that new efforts recognise and, where possible, align with existing initiatives such as CASRAI. Both universities and funders are encouraged to invest in **strengthening administrative capacity** as a specific aim, rather than expect this to emerge as a by-product of research projects.

2.2 Information and transparency regarding other funded research and donor support

Issue: In order to avoid duplication and to help leverage and extend the investments of others, research funders are increasingly keen to be able to access information about other sources of research and capacity strengthening funds flowing into a university. This includes transparency around how overhead rates are calculated and where overhead costs go within the university.

Challenge: Such information is often difficult to come by.

Options: In addition to the greater use of websites to publicise research activities, funders can begin to **map research activities** and **share information** about their research funding. A number of funders have already started work in this area. The NIH/FIC reported that it has piloted a joint project with other funding agencies⁴ to map direct (and indirect) investments in biomedical research support in sub-Saharan Africa. The NIH would like to see the joint mapping effort expanded to other countries and funders, and kept up to date.

The use of **ORCID identifiers** could also help to ensure that such mappings are inclusive of wider research teams and collaborators beyond the principal investigator and the awardee institution.

⁴ NIH world report at <http://worldreport.nih.gov>

3. Sharing and disseminating project outcomes

Issue: In order to leverage research project outcomes for greater impact, the effective communication of lessons and experiences from ongoing and completed projects can help to both raise the visibility of a university or academic's research activity, as well as inform future project design at peer universities.

Challenge: Internal university structures are not often designed to ensure the consistent communication of project lessons and experiences. Individual researchers do not often have the time, resources, or communications expertise to package and disseminate project outcomes for audiences other than their core audiences. Web managers and communications offices are also not always fully apprised of research project outcomes.

Options: Encouraging individual researchers to *utilise social media channels* to drive outcomes concerning their research projects can democratise and simplify communications surrounding project outcomes, and can heighten visibility of these outcomes to a greater range of audiences and potential partners.

Structuring university systems to ensure that a consistent flow of information about research outcomes reaches the appropriate *marketing, communications, and web managers* can also ensure that universities are able to drive information on projects that align with institutional research and partnership strategies. Learning from existing resources and expertise in modelling such structures (such as that found at universities participating in the DRUSSA⁵ programme) can ensure best practice is utilised and can help universities to avoid 'reinventing the wheel'.

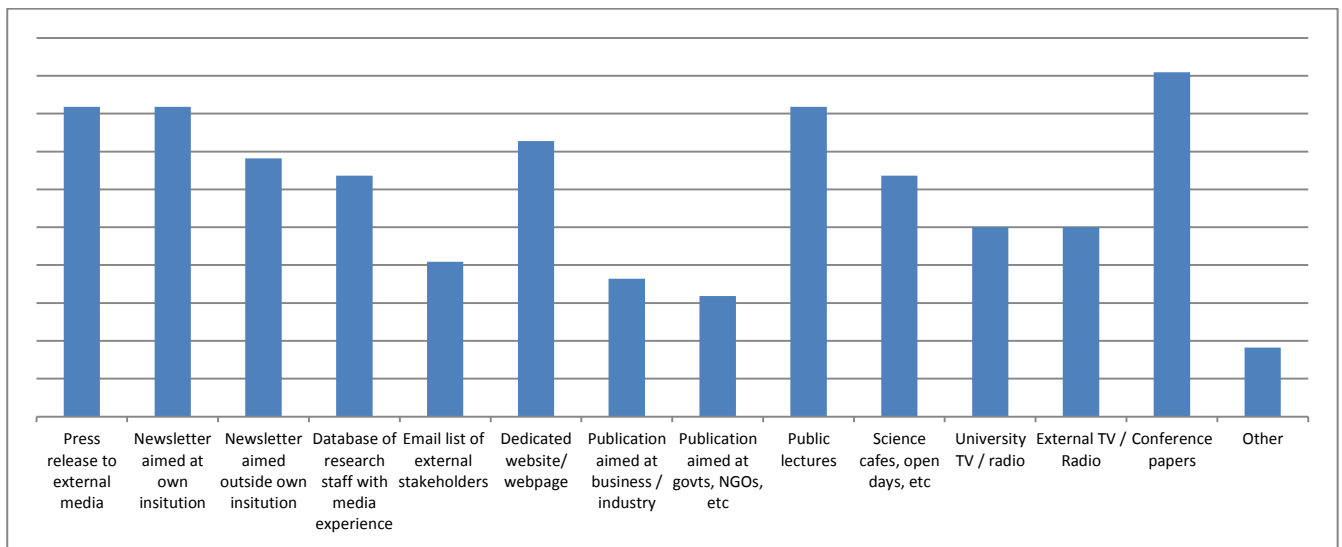
⁵ DRUSSA (Development Research Uptake in Sub-Saharan Africa) is a five-year programme which aims to strengthen the research management capacity of 22 research-intensive universities in sub-Saharan Africa. See www.drussa.net

4. Survey findings

In 2014, the ACU conducted a benchmarking exercise for universities involved in the ACU-led DRUSSA project (Development Research Uptake in Sub-Saharan Africa) and a research management benchmarking exercise for ACU member universities. These exercises included different groups of African universities, although there was overlap between the benchmarking groups and the group of institutions represented at the Funders and African Universities Forum.

Figures 1-3 show a sample of the findings relating to the use and communication of research information, and views on research management in general.

Figure 1: Most used communication channels for university research



Source: DRUSSA Benchmarking Survey 2014 (sample: 22 African universities).

Figure 2: Use of centrally recorded research-related information

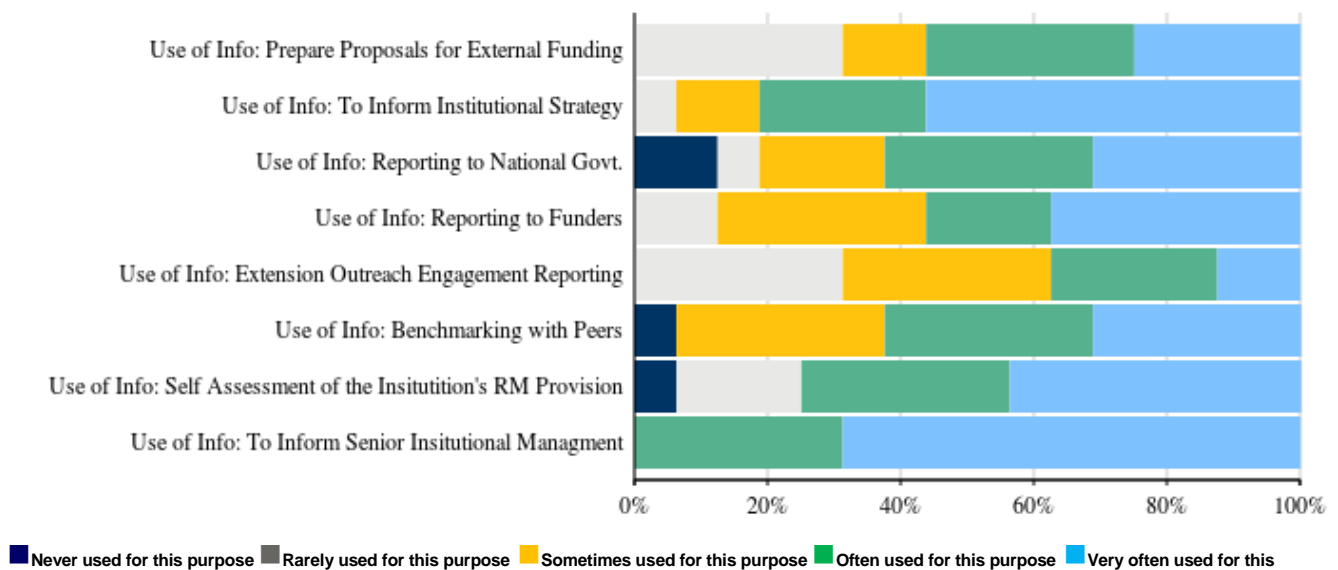
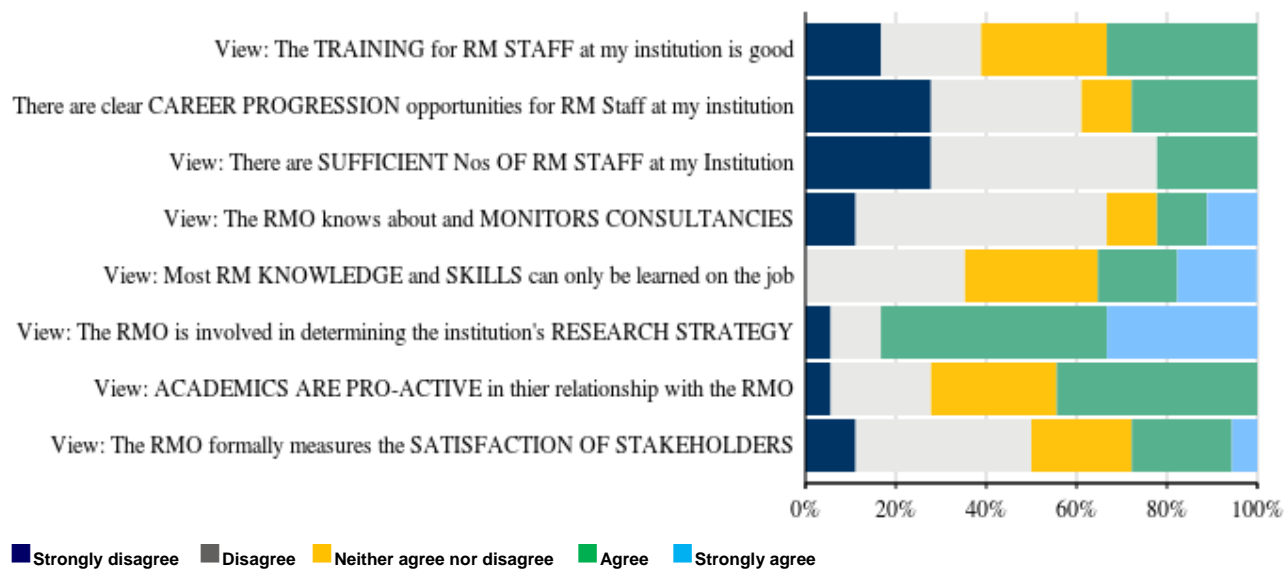


Figure 3: Views on research management



Source: ACU Measures research management benchmarking exercise 2014 (sample: senior research administrators at 18 African ACU member universities).

5. Summary and recommendations

This paper highlights a number of options that may be considered as a means of moving forward in better managing research-related information. These have deliberately not been cast as recommendations since, given the resource constraints within research administration, each will need further discussion and exploration in the context of competing priorities.

The issues discussed above do highlight, however, that in the context of a growing international movement towards the development and adoption of standard reporting for research information, sound research information management practices are contingent on community and reciprocity. This in itself suggests three broader recommendations:

1. **There is a strong role to be played by the research and innovation management associations**

The regional research and innovation management associations (RIMAs), created and/or strengthened as part of the RIMI4AC⁶ project, already have a strong record of training and coordinating networks across universities in Africa. They are therefore well positioned to support development in this area, as well as helping to facilitate broader communication and dissemination of research-related information.

It should be noted, however, that although they are active in research management capacity-strengthening activities, RIMAs themselves also require support to develop, professionalise, and ensure that they are self-sustaining associations.

2. **Continuing dialogue among the funding community and between research funders and universities is critical**

Many of the issues discussed in this paper can only be addressed through collective actions on the part of the research institutions and research funders. This in turn requires a continuation – and perhaps an expansion – of the open dialogue taking place between research funders through groups such as ESSENCE⁷, as well as between funding bodies and representatives of the research community through events such as the Funders and African Universities Forum convened by the ACU

3. **Greater investment in research management capacity**

The last decade has seen progress towards better research management within African universities, including the creation of regional research management associations⁸ and new offices within universities. However, robust information systems are vital if this progress is to be sustained. African universities must continue to keep pace with international developments in emerging areas of research management (in this case, research information management) and develop systems that reflect their local requirements, as well as funders' requirements. However, universities for the most part report negative views of their provision for research management (see Figure 3).

Addressing the issues highlighted here in advancing the use and management of research-related information will inevitably have time and resource implications for central research management offices that currently view themselves as under-staffed and inadequately trained. For progress to be achieved, increased resources will undoubtedly need to be allocated toward central research management operations. However, returning to the first recommendation above, there are opportunities to pool resources and work through the RIMAs as a practical and cost-effective way to build research management capacity – especially within the area of collective training activities.

⁶ The RIMI4AC project, funded by the EU's Africa Caribbean and Pacific Science and Technology Programme, aimed to strengthen research and innovation management in Africa and the Caribbean regions. The project ran from 2009-2013.

⁷ ESSENCE on Health Research is a collaborative network of funding agencies which aims to scale up the coordination and harmonisation of research capacity investments, thereby improving their impact.

⁸ J. Kirkland; P. Ajai-Ajagbe, *Research management in African universities: from awareness raising to developing structures* (2013)

The Funders and African Universities Forum was organised by the ACU, with support from the Wellcome Trust. Funders represented at the event were the International Development Research Council (IDRC), the National Institutes of Health Fogarty International Center (NIH/FIC), the National Research Foundation (NRF) South Africa, the Swedish International Development Agency (SIDA), the United States Agency for International Development (USAID), the Wellcome Trust, and the World Health Organization's Special Programme for Research and Training in Tropical Diseases (WHO-TDR).

To find out more, contact:
Patrice Ajai-Ajagbe, Programme Officer
patrice.ajai-ajagbe@acu.ac.uk

The Association of Commonwealth Universities

Woburn House, 20-24 Tavistock Square
London WC1H 9HF, UK
www.acu.ac.uk