A Framework and Indicators to Improve Research Capacity Strengthening Evaluation Practice

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PRACTICAL GUIDANCE FOR IMPROVING EVALUATIONS OF RESEARCH CAPACITY STRENGTHENING PROGRAMMES

Introduction

In 2019, the Centre for Capacity Research at the Liverpool School of Tropical Medicine (LSTM) and the African Population and Health Research Centre (APHRC), collated evidence to inform initial guidance about how to improve evaluations of, and indicators for, research capacity strengthening (RCS) programmes in low and middle-income countries (LMICs). The project was funded by the internal DFID Strategic Evaluation Fund and addressed the linked problems of the lack of a) frameworks and robust indicators to determine the impact of RCS programmes and b) a unifying, evidence-based approach to underpin funders' substantial investments in RCS efforts. The RCS evaluation recommendations and guidance resulting from this project should enable comparisons of RCS progress among projects and schemes and will facilitate real time learning and tracking along a trajectory to achieve RCS impact.

Approach to the project

Evidence was predominantly drawn from peer-reviewed and grey literature and an analysis of, primarily DFID-funded, RCS programme documents. An RCS evaluation framework[1] was drafted by refining and harmonising existing frameworks, and indicators that were generic to diverse types of RCS programmes were agreed through workshops and consultations with RCS funders, implementers, managers and evaluators. Indicators were mapped onto the framework, guidance about how to design and conduct more rigorous RCS evaluations was developed, new RCS evaluation concepts were created and next steps in the process of testing and validating the framework and indicators were outlined.

The RCS evaluation framework and indicators

RCS is generally conceptualised as being targeted at any or all of three levels - individual, institutional and societal. These levels therefore formed the backbone of the framework and sub-components were added within each of these levels. Examples of indicators for each sub-component are provided in figure 1: the full list of indicators is included in the report.

Figure 1. RCS evaluation framework

Target level for RCS	Examples of indicators
Individual level	
Provision and quality of training for the research team	• Quality of graduates from RCS programmes (e.g. technical capability, critical thinking skills, confidence, empowerment, employability) appropriate for career stage • Individualised training needs assessments conducted and reviewed
Recognition of research leadership/esteem	• Increase in confidence and empowerment to take leadership positions • Able to create and/or manage multi-disciplinary teams
Career trajectory	• Evidence of progressing in chosen career • Number of networks and collaborations joined or initiated
Institutional level	
Career pathways for the research team	• Transparent, equitable promotion criteria and processes, and career progression • Mentoring scheme (inter-generational) available and effective

[1] This framework comprises a list of broad categories within which indicators can be mapped. It is different from a traditional evaluation framework which incorporates substantial detail on evaluation questions, approach and methods.

Sustainable provision of appropriate, high quality training	• Students' completion, progression and employment rates • Quality and sustainability of courses and graduates including multi-disciplinarity capability
Nationally/internationally competitive research and grants	• Consistent, high quality research productivity (grants, publications, patents, start-ups, commercialisation) • Ability (or on a trajectory) to support the 'research pipeline' from basic science to community/ behavioural
Research environment – finance, library, IT, labs etc	• RCS strategic plan, with funding, implemented and monitored • % of budget spent on strengthening research systems
Societal (national/international level)	
National: research councils/research productivity	• Ability to manage transparent, efficient and competitive processes for allocating national research funds • Research productivity (funds, publications, patents) + trends
International: networks/ collaborations	• Research hubs – number, diversity, esteem, infrastructure • International mentorship
Research impact and user engagement	• Research-influenced policies • Innovations that impact on society

Several indicators were identified for each of the sub-components (annex 1 in report). Where indicators were unknown or unavailable, the topic area of interest was indicated against the framework sub-component. Further work will be required to develop and test RCS evaluation indicators where these do not exist.

New RCS evaluation concepts

Two new concepts emerged from the project. Firstly, it is important to ensure that the over-arching theory of change which describes how the overall scheme will achieve impact, and the theories of change for each funded RCS project, are all aligned. Secondly, funders of RCS programmes can maximise evaluations of impact by explicitly capturing the RCS 'ripple benefits' that inevitably occur across the interfaces between individuals, institutions and societies. These concepts were incorporated into the guidance and recommendations for RCS evaluations. They address the current problems faced by RCS funders created by the lack of a unifying, evidence-based approach to underpin their RCS efforts. They help to moderate unrealistic expectations that investments in individuals should have direct high-level impact and will make alignment between the scheme-level goal and the goals of RCS projects within a scheme much more explicit. Combined with the validated RCS framework and indicators, incorporation of these concepts into new and existing RCS schemes will facilitate intra- and inter-scheme comparisons and enable a much more rigorous, harmonised and effective evaluation of RCS schemes.

Practical guidance and recommendations for improving RCS evaluations

The recommendations and guidance developed through the project are aimed at funders of RCS schemes, programmes and projects. They have been arranged according to whether they apply a) to the commissioning and design of RCS programmes and schemes, b) to the evaluation of RCS projects, or c) general RCS principles concerning evaluations. They have also been arranged roughly in the order in which they are likely to be considered and implemented (figure 2).

Figure 2. Practical guidance and recommendations for improving RCS evaluations

Recommendations and guidance for the commissioning and design of RCS programmes/schemes
Use **good quality RCS evaluations** to demonstrate the value of investments, the uptake of evidence by stakeholders and the contribution of RCS to achieving lasting change
An **over-arching theory of change** which describes how the overall scheme will achieve impact needs to be developed before commissioning projects, and the projects' own theories of change, activities and monitoring indicators should be flexibly aligned within the scheme ToC
RCS scheme funders need to explicitly decide how to **balance the criteria of 'excellence' against 'equity'** since the former may imply focusing on a few high-performing centres and the latter implies support for a wide range of potentially poorly performing centres (Gregorius et al, 2017)
The larger the programme or scheme, the more the RCS impact indicators should be focused at **societal level because this is the level at which programmes expect to have their impact**
RCS funders should consider providing a **specialist scheme-level team** to help RCS implementers generate high quality data against RCS indicators since these data will require mixed methods (especially qualitative methods) expertise
Recommendations and guidance for the evaluation of RCS projects
RCS projects should be 'standalone' or associated with, but not embedded within, larger research projects. Embedding makes it difficult to track progress along the activities-outputs-outcomes pathway and, for the majority of researchers, their primary goal will be to achieve the outcomes of their research project rather than that of the embedded RCS project
Ensure that RCS implementers **establish a baseline of research capacity** against which to track progress and impact
Consider **using trends of an increase in pre-specified RCS outputs and outcomes** over time, to demonstrate that a project is on a trajectory to achieve impact
Explicit indicators for evaluating **RCS equity and inclusivity** should be included in RCS evaluations if these are important aspects of the project
Where relevant, projects should incorporate **indicators of sustainability** of research capacity improvements throughout a project lifetime
Incorporate **indicators of multi-disciplinarity** into RCS evaluations as this demonstrates the sophistication of research capacity of individuals, institutions and nations
Incorporate **RCS indicators that demonstrate employability** (e.g. innovation and entrepreneurship) since these attributes are important for achieving the longer-term goal of improving socio-economic development
Ensure evaluations explicitly capture the '**ripple benefits**' that occur across the interfaces between individuals, institutions and societies
Consider providing limited funding to **continue measurements after the end of a project** to improve understanding of what does/does not work for long term impact of RCS
General recommendations and guidance concerning principles of RCS evaluation
There should be a change in language and emphasis away from 'researchers and research support staff' towards **the 'research team'** in recognition of the important inter-dependency of the researchers, research managers and other members of the research team in strengthening research capacity

RCS evaluations need to **involve target users** so that the contents of the evaluation, and the data collected and generated, meet their needs
RCS evaluation indicators need to be designed strategically and to be **robust, valid and valued**
RCS evaluations should balance **quantitative and qualitative indicators at all three levels** of the RCS evaluation framework to capture cultural, behavioral, attitudinal and systems changes
RCS evaluations need to affirm that it is the **'contribution' of an RCS investment rather than 'attribution'** that should be measured and that RCS impact occurs at scheme or programme level irrespective of the level at which RCS investment occurred (providing that RCS activities are aligned within an over-arching theory of change)
Emphasise through strategies and actions that the purpose of RCS evaluations is to **promote learning rather than for accountability**

Next steps for achieving progress in improving RCS evaluations

1. **Make sure that new RCS programmes/schemes have an overarching theory of change (ToC) for achieving RCS impact and that a small number of the same important generic ToC-related indicators are included in every project within the scheme.**

Lack of an over-arching theory of change for many RCS programmes is a major barrier to being able demonstrate progress along a trajectory to achieve impact. It also limits funders' ability to commission a cohesive set of projects that all contribute to the overall RCS goal. Incorporating a few of the same carefully chosen ToC-related RCS indicators in every project, will enable comparisons to be made between projects within a scheme (and potentially between schemes) and allow collation of RCS data from across all projects. The indicators should be chosen so that they are valued by the RCS project implementers and not too onerous. Provision of scheme-wide support to RCS implementers to collect good quality data against these indicators may be helpful.

2. **Test the RCS framework and indicators**

This project has identified a range of broad indicators (or RCS topics to which indicators could be applied) within each of the three levels of the RCS evaluation framework. Indicators-of-interest need to be selected by RCS scheme organisers and applied to new, and possibly existing, RCS initiatives. As this RCS evaluation approach is innovative and experimental it will be important to envisage the testing of the frameworks and indicators as a research project with prospective design, rigorous methods and robust data analysis. It will be important to also evaluate the skills, time and resources needed to produce data against these indicators to help funders and practitioners decide when and how they should be applied to RCS evaluations.

3. **Develop methods for measuring important RCS topic areas for which there are no existing valid and robust indicators**

There are several RCS topic areas that have been identified through this project as important and generic, but for which there are no existing widely accepted measures. Many of the indicators for these topics are likely to be qualitative and so social science research skills will be needed to generate high quality data against the indicators. Examples include measures of graduates' critical thinking skills, confidence and empowerment in potential research leaders, multi-disciplinary research capability, and entrepreneurship.

4. **Validation of project findings by other international RCS funders**

RCS evaluations are problematic for many development funders and the findings from this project therefore have the potential to result in a step change in the way RCS evaluations are designed and conducted globally. However, substantial data for this project were derived from an analysis of DFID-funded programme documents. It is therefore important to validate these findings beyond DFID

programmes by applying a similar, though likely less intense, analysis of programmes and consultation process with international non-DFID funders.

EXECUTIVE SUMMARY

Despite significant investment in research capacity strengthening (RCS) programmes in low and middle-income countries (LMICs), frameworks and robust indicators to determine the impact of these programmes are lacking. The Centre for Capacity Research at the Liverpool School of Tropical Medicine in partnership with the African Population and Health Research Centre (APHRC) therefore undertook this seven-month project commissioned by DFID. The aim of the project was to develop guidance on improving RCS evaluation practice, particularly in sub-Saharan Africa, and to identify helpful indicators to better direct current and future RCS investments.

RCS is generally conceptualised as being targeted at any or all of three levels - individual, institutional and societal - so these levels were used as the basis for an initial draft RCS evaluation framework. A review of the relevant published, peer-reviewed literature was conducted to identify any relevant existing RCS frameworks and indicators that could be adapted or utilised for the project. RCS indicators were also extracted from documents from 35 programmes (31 from DFID) which had a strong RCS and Africa focus. The indicators were mapped onto the three levels in the RCS framework and the framework was iteratively refined to incorporate the indicators. The RCS evaluation framework and indicators were adjusted and validated through two consultative workshops involving research funders, implementers, university faculty and research management staff, and through key informant interviews with senior individuals from different RCS funding organisations.

Practical recommendations about designing and conducting RCS evaluations emerged from the project as well as generic indicators which could be used to compare RCS progress among projects and schemes. These included the need to establish a research capacity baseline using indicators that would then be used systematically to track trends and progress, the need to design RCS projects in such a way that they are not embedded as a secondary activity within another research project, and the need to pre-define the project's RCS impact pathways. The importance of continuing to measure RCS indicators, including those of potential sustainability, for several years after the end of a project was also highlighted.

Two new concepts concerning RCS evaluations emerged from the project which have practical implications for commissioning, designing and evaluating RCS programmes. The first concept emphasised the importance of establishing a theory of change to describe how the overall scheme will achieve impact, and subsequently ensuring that the theory of change for each funded RCS project is aligned with the overall scheme theory of change. The second concept illustrated how funders of RCS programmes can maximise impact by explicitly capturing the RCS 'ripple benefits' that inevitably occur across the interfaces between individuals, institutions and societies.

These concepts address the current problems faced by RCS funders created by the lack of a unifying, evidence-based approach to underpin their RCS efforts. Adoption of these approaches will help to moderate unrealistic expectations that investments in individuals should have direct high-level impact and will make alignment between the scheme-level goal and the goals of RCS projects within a scheme, much more explicit. Combined with the validated RCS framework and indicators, incorporation of these concepts into new and existing RCS schemes will facilitate intra- and inter-scheme comparisons and enable a much more rigorous, harmonised and effective evaluation of RCS schemes.

1 INTRODUCTION

1.1 BACKGROUND AND RATIONALE

DFID's 2015 Position Paper on Research Capacity Building sets out the complexity of national research systems and the need for comprehensive support to all individuals and organisations in the research chain to have an impact. The UK Government re-emphasised its commitment to research capacity strengthening (RCS) for development in its response to the 2012 House of Commons Science and Technology Committee report on Building Scientific Capacity for Development and the 2011 Science and Engineering Assurance Review.

Several organisations are actively focused on improving the evaluation of RCS initiatives. For example, the ESSENCE on Health Research (a coalition of funding agencies) has developed a good practice document and a Planning, Monitoring and Evaluation Framework for RCS. This document highlights the importance of evaluating the sustainability and impact of RCS programming, beyond the standard output and outcome-level indicators (ESSENCE on Health Research, 2016). Recommendations for funders included building the capacity of researchers in the global 'south' to enable them to conduct sustainability evaluations independently, and developing supporting guidance, tools and training for evaluation. In practice, uptake of the ESSENCE framework has been limited partly due to lack of associated information about how to implement the framework and a lack of separation of generic and project-specific aspects of RCS evaluations (Boyd et al, 2013). The UK Collaborative on Development Research (UKCDR) facilitates a Research Capacity Strengthening Group comprising UK funders and practitioners who share, learn, connect and improve practice in research capacity strengthening. The group comprises over 20 organisations, including DFID, Wellcome Trust, UKRI, Department of Health, INASP, Royal Society and the Association of Commonwealth Universities. Several organisations have expressed interest in improving evaluation practice, for example the development of indicators and practical guidance for funded projects on how to measure these.

A group from DFID's Research and Evidence Division (RED) led a mapping of DFID programmes as part of their Strengthening Evidence Systems initiative. The mapping aimed to strengthen research capacity and systems in Sub-Saharan Africa and identified 14 relevant programmes representing a total investment of over £155 million. Two key priority areas identified by the RED group included: the lack of a unifying, evidence-based theory of change for DFID's work on strengthening research systems, and the lack of sufficient frameworks and robust indicators to determine the impact of DFID's RCS programmes. A lack of good evidence on what works in RCS, and poor quality of indicators, frameworks and processes for monitoring and evaluation of RCS have also been identified in the published literature (Boyd et al, 2013; Cole et al, 2014; Franzen et al, 2017).

To address the needs identified by DFID and various stakeholders to better direct current and future RCS investments, DFID contracted the Centre for Capacity Research at the Liverpool School of Tropical Medicine, UK to undertake a project to develop guidance on improving RCS evaluation practice (for Terms of Reference see annex 2) in partnership with APHRC. A steering group with representatives from DFID London, DFID East Africa and UKCDR provided guidance on the project approach and findings, and reviewed the draft report.

1.2 AIM AND OBJECTIVES

The **aim** of this project was to develop guidance on improving RCS evaluation practice to better direct current and future RCS investments.

The **objectives** of this project (derived from the outputs and deliverables in the TORS), and the methodological approach for each objective, were:

1. Conduct a rapid review of literature on RCS evaluation practice, with a focus on indicators used for evaluating RCS impact in SSA

   Methods: *Desk-based, literature review and synthesis of existing evidence to identify RCS evaluation indicators and to develop an initial framework against which to map programme-derived RCS indicators.*

2. Review theories of change (ToC) from DFID's, and other, RCS programmes; identify commonalities and differences between the RCS activities and evaluation indicators in ToCs, and map indicators onto a revised, draft framework that could be used for evaluating RCS in SSA.

   Methods: *Desk-based analysis of relevant documentation to extract common outcome/impact indicators and explore the range of indicators; adapt the draft RCS evaluation framework to incorporate these indicators*

3. Validate the framework and generic indicators in consultation with stakeholders

   Methods: *Conduct validation through workshops with key stakeholders, one with Nairobi-based senior programme managers and funders, and one with a broader international range of stakeholders, and through key informant interviews*

4. Provide guidance on ways to improve RCS evaluation practice to build evidence of impact, including the implementation of the overarching framework and the testing and validation of indicators.

   Methods: *Synthesise information from Objectives 1, 2 and 3 to provide practical guidance on how to approach and implement RCS evaluations and indicators in relation to (meta) programme-level and project level evaluations*

1.3 CURRENT STATE OF KNOWLEDGE ABOUT RCS EVALUATION PRACTICE

In the past there has been an implicit assumption that research capacity would be built simply by providing training and/or equipment alongside research projects. Consequently, the majority of RCS initiatives are embedded within research programmes rather than being stand-alone RCS programmes. More recently attention has been focused on direct support to more systematic RCS approaches. Tools and benchmarks for designing and tracking RCS initiatives at individual and institutional level have been developed and have been shown to be transferable across different contexts and research specialities (Bates et al, 2011; Wallis et al 2017). A key reason for tracking and evaluating RCS programmes is to understand and learn about the RCS processes, as well as to measure the impact of these programmes.

To address the lack of rigorous information about how to evaluate RCS initiatives, an analysis of health RCS evaluation frameworks published by seven funding agencies between 2004 and 2012 was undertaken. The review showed that most frameworks were primarily oriented towards funders' internal organisational performance requirements (Boyd et al, 2013). The frameworks made limited reference to

theories of RCS and they often took the form of generic devices, such as logical frameworks, to document activities, outputs and outcomes, without exploring underlying assumptions or contextual constraints.

The quality and applicability of RCS indicators in different contexts has generally not been validated (Mugabo et al 2015; ESSENCE on Health Research 2016). A study to catalogue the types of indicators used to evaluate health RCS mapped the indicators from funders' evaluation reports along potential impact pathways (activities to outputs to outcomes) and assessed gaps in quality and coverage of the indicators (Cole et al, 2014). The study found that the validity of indicators and potential biases were rarely documented and that information on inter-relationships between indicators for activities, outputs or outcomes was lacking. It was recommended that RCS indicators should better reflect relationships with knowledge users, should be pre-designed and measured prospectively, and there should be more explicit linkage of indicators with theories of change.

1.4 Definitions related to RCS evaluation practice

The landscape of RCS evaluations is complicated by the use of terms which are poorly defined and therefore often mis-interpreted, making it difficult to compare RCS evaluations across different studies and programmes. In particular, there is no commonly used definition for 'RCS impact' and definitions of 'RCS' (reviewed in Dean et al, 2017) and 'impact' as individual terms have widely differing interpretations. Examples of definitions are provided in box 1. For the purpose of this project, the first definition of RCS in box 1 was used. When reviewing project documents, indicators were identified as related to 'impact' if this is how they were described or implied by authors. We did not use a specific definition of impact for other aspects of the project though 'impact' was used broadly to indicate longer-term high-level outcomes that were well downstream of the initial RCS activities.

Box 1. Example definitions for RCS and impact

Research capacity strengthening is:

- a process by which individuals, organisations, and society develop ability to perform [research] functions effectively efficiently and in a sustainable manner to define objectives, and priorities, build sustainable institutions and bring solutions to key national problems (Minja et al., 2011)
- "any effort to increase the ability of individuals and institutions to undertake high quality research and to engage with the wider community of stakeholders" (ESSENCE on Health Research, 2016)

Impact of research is**:**

Impactful dissemination of research leading to policy or practice changes; continuity and sustainability of research through collaboration and supervision and mentorship structures; and established infrastructure for research (Mugabo et al., 2015).

Academic impacts of research (UK Research and Innovation)

- Academic advances, across and within disciplines, including significant advances in understanding, methods, theory and application
- Academic impact may form part of the critical pathway to economic and societal impact.

Economic and societal impacts of research (UK Research and Innovation)

Embrace the diverse ways in which research-related knowledge and skills benefit individuals, organisations and nations by fostering global economic performance, increasing the effectiveness of public services and policy, enhancing quality of life, health and creative output.

2 METHODS

2.1 LITERATURE REVIEW (OBJECTIVE 1)

We conducted a review of published literature on RCS evaluation practice, with a focus on evaluating RCS impact in Africa. The purpose was to ensure that we were using the latest evidence to inform this project and to extract illustrative evidence concerning RCS impact indicators and frameworks used to map RCS indicators. The review process was structured around the guideline for Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA- ScR) (Tricco et al., 2018). The following section describes the steps followed in the literature search and review.

Eligibility criteria

Inclusion criteria:

We included peer reviewed journal articles that were published between Jan 2008 and Dec 2018 that focused on RCS initiatives in Africa. Articles' titles, abstracts and keywords that contained the following words or terms, were identified: Africa, capacity strengthening, capacity building, capacity development, impact, evaluation of research capacity strengthening or research impact.

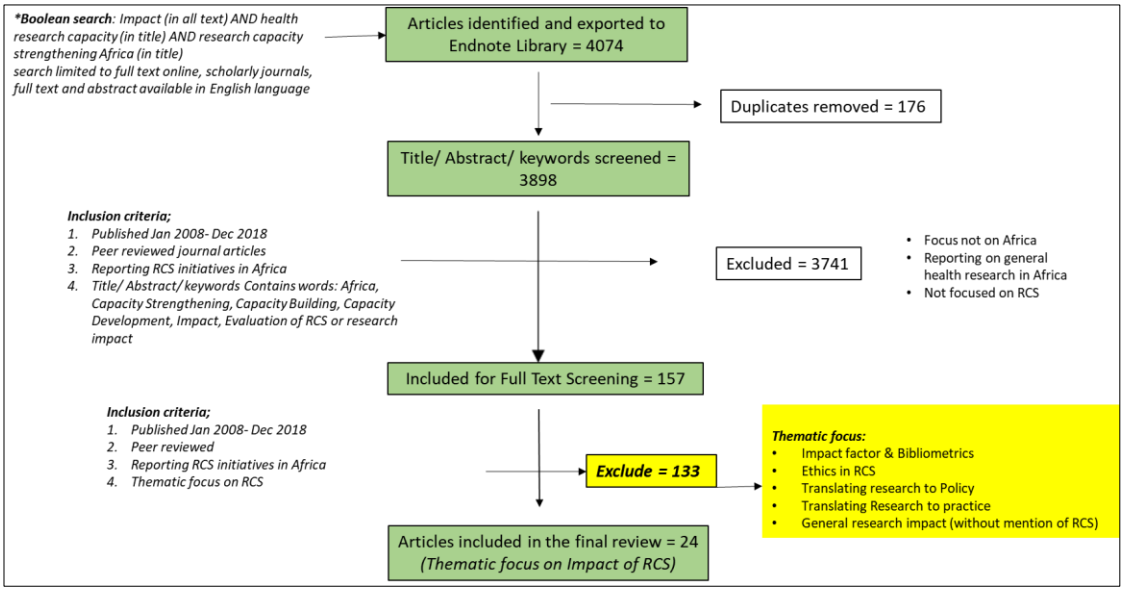
Exclusion Criteria:

Papers that i) did not focus on Africa ii) reported on general health research, iii) were not focused on RCS or iv) reported on the general impact of research, without focusing on the impact of RCS (e.g. bibliometrics, ethics, translation of research into policy or practice) were excluded.

Information sources and electronic search strategy

A Boolean search in EBSCO host database returned results from 9 databases – Scopus, Science direct, Medline with full text, CINAHL Plus, JSTOR, DOAJ, ERIC, ScieLO, Library Information Science and Technology Abstracts. The search terms were*: Impact (in all text) AND health research capacity (in title) AND research capacity strengthening Africa (in title).* The search was limited to full text online, scholarly journals, and full text and abstract available in English language. 24 articles were identified (annex 3) that were relevant for evaluating RCS impact in Africa (Figure 3).

Figure 3. Flow chart for selection of articles included in the literature review



Data extraction and development of first draft over-arching framework for RCS evaluation
Data were extracted from the 24/157 full text articles selected for analysis. The data were entered into an excel spreadsheet to record information about whether the publication described primary research, was a systematic or scoping review, or whether it was a perspectives or opinion article. The methods described in the paper concerning how RCS evaluations were carried out and the focus of the RCS evaluation (e.g. lessons learnt, programme outputs, outcomes or impact) were also recorded.

Impact or high-level outcome Indicators for RCS that were reported and which were generic (i.e. were transferable across programmes because they were not specific to any research topic or context) were mapped against three categories which are widely used for designing RCS evaluations (Bates et al, 2014; ESSENCE, 2016). These categories refer to the 'level' at which the RCS activities are targeted i.e. individual, institutional[2] or societal[3]. Duplicate indicators were amalgamated and indicators that measured similar RCS activities were then grouped together within each of the framework levels. The framework was iteratively adjusted to incorporate the indicators. This draft framework was used as the starting point for discussions at subsequent workshops and against which to map indicators extracted from RCS programme documents.

2.2 Review of programme documents (objective 2)

We were provided with documents from 31 DFID-funded African programmes that were primarily focused on, or had a large component of, RCS. In addition, four documents were sourced from other funders' RCS programmes and we obtained additional general information on RCS from UKCDR and the Science Councils (annex 4). Most of the 35 programmes were considered to be primarily focused on RCS (18/35), but in some (11/35) the RCS activities were embedded within a research programme. Six could not be categorised due to insufficient documentation being available.

Programme-associated documents, such as logical frameworks, theories of change, evaluation reports and project descriptions were used as sources from which to extract data relevant to RCS evaluation. Information on RCS impact and high-level outcome indicators, and their context, was extracted into an MS Excel spreadsheet. The indicators were mapped against the three levels in the framework depending on whether they focused on strengthening research capacity at the individual, institutional or societal level.

The decision about whether a particular indicator related to 'outcome' or 'impact' and whether it was associated specifically with RCS or with an associated research project, was often very subjective. This was particularly a problem for 'societal' level indicators so through discussion between three researchers each societal level indicator was colour-coded to show whether it was likely, possibly or unlikely to be related to RCS impact measurement. Lists of these indicators at each level in the framework, with brief information about the programme and the context of the programme from which they were derived, were provided to workshop participants (objective 3) as resources to help their discussions.

2.3 Validation workshops and interviews (objective 3)

Two workshops were held with stakeholders who had been selected on the basis of their experience and interest in RCS evaluations. The workshop participants comprised research funders, implementers, university faculty and research management staff. The purpose of the workshops was for participants to contribute to validating the draft RCS framework and indicators. The workshops were also used to collate the RCS evaluation indicators that participants had used themselves, or were aware of, and to identify any challenges with using the indicators in practice. An initial list of potential indicators under each item

[2] 'institutional' refers to organisations, institutes etc that produce research

[3] 'societal' is also referred to as environmental, systems or national/international level

in the framework was constructed based on our own knowledge and experience, the literature review, and the analysis of the programme documents.

The **first workshop** held on 20th February 2019 at APHRC Nairobi and was attended by 14 participants most of whom were located in Nairobi but represented multi-country programmes. They had been selected on the basis of recommendations by DFID, APHRC and LSTM because of their expertise in evaluating RCS initiatives (annex 5). The **second workshop** was held on 22nd February 2019 as a two- and a half-hour session within a research management standards workshop organised by the African Academy of Sciences. The 43 workshop participants comprised research managers and administrators, university faculty and research funders (annex 6). Findings were also presented at a meeting of **UKCDR Research Capacity Strengthening Group** on 16th April 2019 and discussion points from that meeting have also been incorporated into the project findings (annex 7).

2.4 Key informant interviews (objective 3)

The RCS framework and indicators underwent minor revisions following the validation workshops and were then sent to five key informants who were senior individuals from different RCS funding organisations in the UK and Europe. They had been selected for their expertise in RCS and for their diversity of opinions and expertise, and they had agreed to participate in a telephone call to solicit their opinions and comments (annex 8).

Comments from the interviews were used to finalise the RCS evaluation framework and the list of indicators that have been, or could be, used under each component of the framework. In addition, key points concerning innovative concepts and approaches to designing and undertaking RCS evaluations that emerged during the workshops and interviews were synthesised with supporting diagrams.

3 Findings

In addition to specific details about an agreed RCS evaluation framework and indicators, the multi-perspective nature of our project meant that we were also able to develop some new theories, concepts and approaches to help conceptualise the process of designing and evaluating RCS. These are presented in the section below following the details concerning the RCS evaluation framework, RCS evaluation practice approaches and RCS evaluation indicators. The following sections summarise project findings concerning the framework, indicators and their implementation in practice. Feedback on the RCS framework and indicators from the workshops and interviews was very encouraging in that there was general agreement that they were comprehensive, captured key aspects of RCS evaluations and resonated with participants' own experiences and needs.

3.1 RCS evaluation framework

Information from the workshop discussions, and the review of literature and programmes documents, was used to revise the initial RCS evaluation framework so that it better met the needs of RCS programme managers, evaluators and funders (figure 4). The revisions also took account of the need to be able to map measurable indicators against the content of the framework. The three levels within the framework were maintained and through the validation process it was clear that the terms 'individual' and 'institutional' level in the RCS evaluation framework were widely accepted and understood. The term 'societal' was understood to represent everything above the institutional level (predominantly national and international levels). In future it may be helpful to consider societal level impact under the areas of research production, research brokerage and the use of research. Although the term 'societal' was not considered wholly satisfactory, no better term emerged during the project so we have retained this term in the final framework.

Figure 4. Initial and revised RCS evaluation framework following two workshops and key informant interviews, categorised by the level at which the RCS activity is focused

Initial (draft) framework	Revised (final) framework
Individual level	
Research Training (e.g. PhD): Provision and Quality	Provision and quality of training for the research team
Research leadership	Recognition of research leadership/esteem
Research skills courses	Career trajectory
Institutional level	
Promotion criteria	Career pathways for the research team
Internationally competitive research and grants	Nationally/internationally competitive research and grants
Research environment – finance, library, labs, etc	Research environment – finance, library, IT, labs etc
	Sustainable provision of appropriate, high quality training
Societal (national/international level)	
National: research councils/ research productivity	*National*: research councils/research productivity
Networks/ collaborations	*International:* networks/ collaborations
Research uptake and engagement	Research impact and user engagement

3.2 RCS EVALUATION INDICATORS

The final part of this section of the report includes a critique of how the RCS evaluation indicators from programme documents (annex 9) compare to those in the published literature. This was necessary because the source of the RCS indicators may bias the type of indicators; for example indicators extracted from the programme documents will primarily reflect internal DFID interests whereas those from the published literature are likely to be much more diverse and more reflective of non-DFID contexts.

Indicators drawn from programme documents

RCS indicators that were extracted from programme documents formed an initial list that was expanded and validated through the workshops and consultations. Examples of RCS impact (or high-level outcome) indicators at individual, institutional and societal level were identified within the programme documents and data were extracted into an excel spreadsheet. The programme documents generally provided information about the intended broad goal of the project rather than describing SMART indicators for impact. There were more examples of SMART indicators for outputs than for impact stage, such as numbers of PhD students and conference attendances. The balance of indicators between the three levels tended to reflect the focus of the programmes which was primarily on individual and societal, rather than institutional, level. The indicators from the programme documents that could be considered to be 'generic' (i.e. transferable across different programmes were mapped onto the evaluation framework, which was iteratively adjusted to incorporate the indicators. The framework and indicators were validated together during workshops and through interviews. A full list of the indicators within the RCS evaluation framework, is provided in annex 1 and illustrative examples are provided in figure 5

Figure 5. RCS evaluation framework with illustrative examples of indicators for each level

Target level for RCS	Examples of indicators
Individual level	
Provision and quality of training for the research team	• Quality of graduates from RCS programmes (e.g. technical capability, critical thinking skills, confidence, empowerment, employability) appropriate for career stage • Individualised training needs assessments conducted and reviewed
Recognition of research leadership/esteem	• Increase in confidence and empowerment to take leadership positions • Able to create and/or manage multi-disciplinary teams
Career trajectory	• Evidence of progressing in chosen career • Number of networks and collaborations joined or initiated
Institutional level	
Career pathways for the research team	• Transparent, equitable promotion criteria and processes, and career progression • Mentoring scheme (inter-generational) available and effective
Sustainable provision of appropriate, high quality training	• Students' completion, progression and employment rates • Quality and sustainability of courses and graduates including multi-disciplinarity capability
Nationally/internationally competitive research and grants	• Consistent, high quality research productivity (grants, publications, patents, start-ups, commercialisation) • Ability (or on a trajectory) to support the 'research pipeline' from basic science to community/ behavioural
Research environment – finance, library, IT, labs etc	• RCS strategic plan, with funding, implemented and monitored • % of budget spent on strengthening research systems
Societal (national/international level)	
National: research councils/research productivity	• Ability to manage transparent, efficient and competitive processes for allocating national research funds • Research productivity (funds, publications, patents) + trends
International: networks/ collaborations	• Research hubs – number, diversity, esteem, infrastructure • International mentorship
Research impact and user engagement	• Research-influenced policies • Innovations that impact on society

Coherence of RCS indicators with the peer-reviewed published literature

Our project confirmed previous findings that at individual and institutional levels there were rarely any indicators identified beyond outcome level whereas at societal level, indicators which were described as measuring impact were more common (Cole et al, 2014). The most common type of RCS outcome/impact evaluation indicators from our literature review focused on publication metrics or on translating research into policy/practice. No articles provided a comprehensive list of RCS indicators and the review did not yield RCS quantitative or qualitative indicators which could be described as SMART (i.e. specific, measurable, realistic and time bound).

CCR (Justin Pulford) has recently submitted a paper for publication which was developed prior to this project, titled, '*The establishment of a standardised set of outcome and impact indicators for use across RCS initiatives in LMIC contexts'.* The authors extracted RCS indicator descriptions from all relevant published and grey literatures. 668 RCS indicators were identified from 32 publications/reports. They were sorted according to type (output, outcome or impact) and appraised against four quality criteria. 40% (265/668) were output indicators, 59.5% (400/668) outcome indicators and 0.5% (3/668) impact indicators. Only 1% (6/403) of outcome and impact indicators met all four quality criteria. Indicators were fairly evenly spread across individual, institutional and systematic (i.e. societal) levels. Outcome indicators fell into nine thematic categories, the most common being 'research management and support' (n=97), 'skills/knowledge' (n=62) and 'collaboration activities' (n=53).

Overall in the peer-reviewed literature concerning RCS evaluations:

- very few impact indicators were identified
- the quality of commonly described indicators, both outcome and impact, was poor
- the relatively limited range of indicators were clustered around key focal areas
- these areas were similar to the indicator themes identified in this project

3.3 New concepts concerning the evaluation of RCS investments

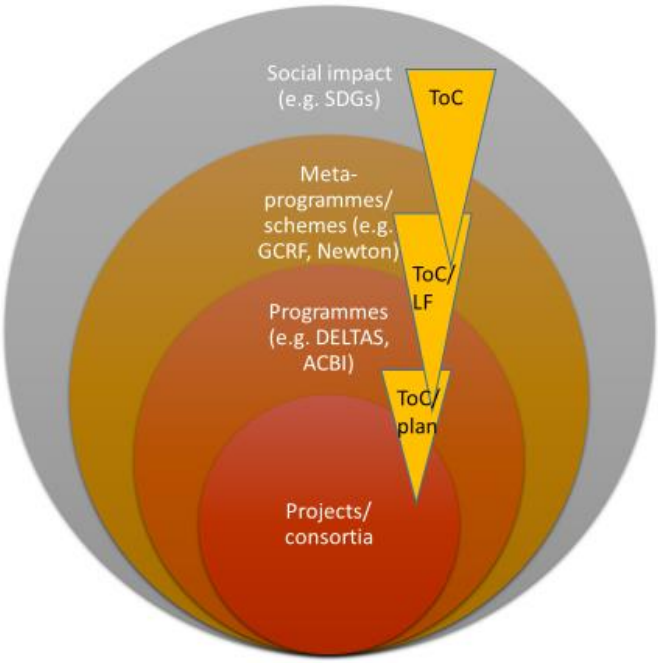
a) Aligning theories of change across the project-programme-scheme interfaces

Achieving RCS impact is a cumulative rather than linear process, and although RCS activities can contribute to change, is not possible or appropriate for RCS evaluations to seek a direct attribution. Key methods for assessing contribution are Contribution Analysis and Outcome Mapping. Contribution Analysis can reduce uncertainty about the contribution that an RCS programme makes to particular outcomes by helping to understand why results have occurred and the interactions between the RCS intervention and other factors (Better evaluation: contribution analysis). Outcome Mapping helps to understand results that are intermediate between the RCS programme's activities and the longer-term economic, environmental, political or demographic changes - the so-called 'missing-middle' (Better Evaluation: outcome mapping).

To maximise impact we propose that each RCS project should be situated within a larger RCS programme, which is itself part of a broader scheme or meta-programme (figure 6). Substantial impact from investments at the highest (meta/scheme) level should be achievable and demonstrable (e.g. on health outcomes, climate, change parameters, food security etc) whereas this level of impact is not an appropriate expectation from activities at the lower levels. To demonstrate activity and achievements along the whole pathway from project through programme/scheme to impact, the activities-outputs-outcomes pathway at these lower levels should be explicitly aligned with the theory of change of the level immediately above. In this way the outcomes from the lowest level become inputs to the next level and so on until impact is achieved.

Currently the lowest level projects and programmes are sometimes expected to have a theory of change but in general, they are either not required to align it to the theory of change from the level above, or else the level above does not have any theory of change to which they can refer (NB. DELTAS is an example of a scheme that required consortia and their projects to align under a pre-designed, scheme-level ToC).

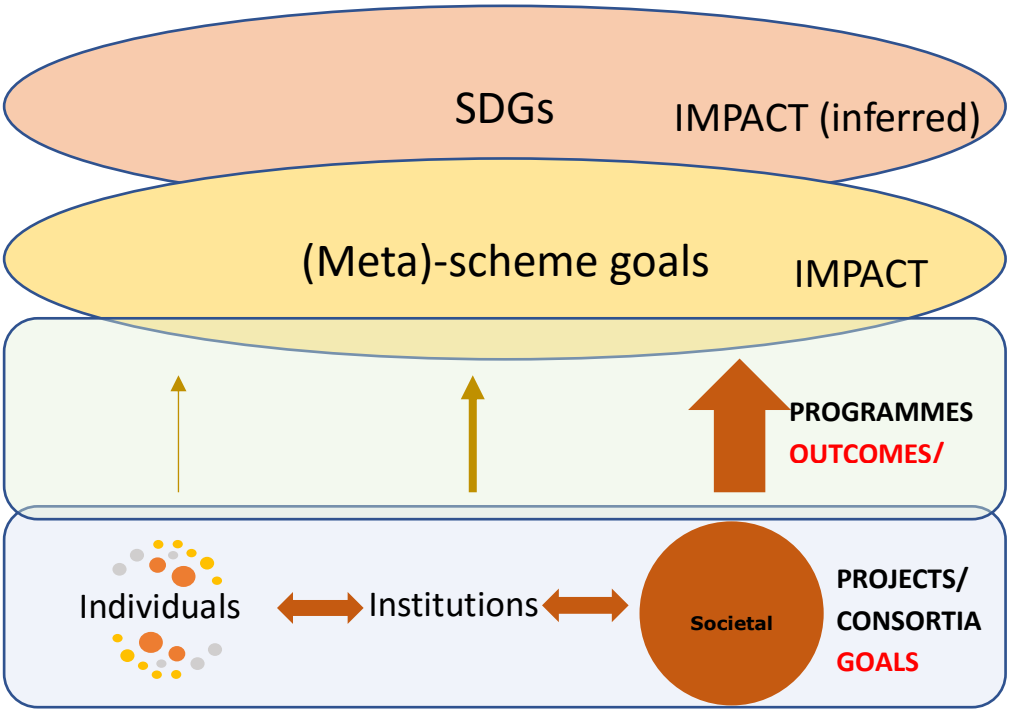
Figure 6. Alignment of RCS activities across project-programme-scheme interfaces within an over-arching theory of change (ToC) and logical framework (LF)



b) The benefits of RCS investment flow from individuals, through institutions to societies

Over the last few years there has been a shift in emphasis and investment in RCS from individuals towards institutions and more recently, towards 'societies'. However, there is still a perception that RCS investment in institutions and even in individuals should be able to achieve and demonstrate high level 'impact'. In practice the main purpose of strengthening the research capacity of many individuals is that they will together contribute to institutions' ability to do more and better research, and that collectively a group of institutions can influence policies and practice to achieve societal impact (figure 6). Value for money of RCS investments could been amplified by explicitly harnessing the RCS 'ripple benefits' that inevitably occur across the interfaces between individuals, institutions and societies. There will inevitably be occasional institutions, and even individuals, that are able to achieve impact themselves, but these would likely be rare exceptions. The expectation of achievement of RCS impact should be that this occurs at meta-programme or scheme level irrespective of the level at which RCS investment occurred providing that RCS activities are aligned within an over-arching ToC (figure 7).

Figure 7. The flow of RCS benefits from individuals, through institutions to achieve societal impact



3.4 LIMITATIONS OF THE PROJECT

The **literature review** we conducted was not designed to be comprehensive: rather, the purpose was to ensure that the research team was aware of, and building on, the latest knowledge about RCS evaluation indicators and frameworks. The focus of the literature review was on RCS indicators that have been used in the health sector because, in our experience, the health sector leads the way in the development and use of RCS evaluations. Furthermore, our previous research has shown that generic RCS approaches, tools and indicators (i.e. those that are not specific to any research topic) can be applied beyond health to other science disciplines including soil science, water and sanitation, and renewable energy. Much of the information from the literature review focused on the health sector and Africa but as the RCS evaluation framework and indicators were generic it is unlikely that substantial new information would come out of a more wide-ranging review.

The **programme documents** that were analysed were primarily from DFID-funded programmes and had been selected because they had a strong or exclusive focus on RCS. This was appropriate given the objectives of the project were to synthesise and validate indicators that had been used in practice to evaluate RCS programmes. However, most RCS takes place through activities that are embedded within a research project so the programmes that were analysed for this study represent the best-case scenario for RCS evaluations. They may therefore not be representative of the bulk of RCS investments beyond these programmes or those of non-DFID funders since DFID are recognised world-leaders in investing in, and understanding, RCS in Africa. The balance of indicators between the three levels tended to reflect the focus of the 35 programmes we analysed, which were primarily on individual and societal, rather than institutional, level and may not necessarily reflect the balance in other RCS programmes.

4 RECOMMENDATIONS AND PRACTICAL GUIDANCE FOR IMPROVING RCS EVALUATIONS

These recommendations and guidance are aimed at funders of RCS schemes, programmes and projects. They have been arranged according to whether they apply a) to the commissioning and design of RCS programmes and schemes, b) to the evaluation of RCS projects, or c) general RCS principles concerning evaluations. They have also been arranged roughly in the order in which they are likely to be considered and implemented.

Recommendations and guidance for commissioning and design of RCS programmes and schemes

1. **RCS projects should be 'standalone' or associated, but not embedded within, larger research projects**. Embedding makes it difficult to track progress along the activities-outputs-outcomes pathway and, for the majority of researchers, their primary goal will be to achieve the outcomes of their research project rather than that of the embedded RCS project
2. Use **good quality RCS evaluations** to demonstrate the value of investments, the uptake of evidence by stakeholders and the contribution of RCS to achieving lasting change
3. An **over-arching theory of change** for the whole RCS scheme needs to be developed before commissioning projects, so that the projects' activities and monitoring indicators can be flexibly aligned within the scheme ToC
4. RCS scheme funders need to explicitly decide how to **balance the criteria of 'excellence' against 'equity'** since the former may imply focusing on a few high-performing centres and the latter implies support for a wide range of potentially poorly performing centres (Gregorius et al, 2017).
5. The larger the programme or scheme, the more the RCS impact indicators should be focused at **societal level because this is the level at which programmes expect to have their impact**
6. RCS funders should consider providing a **specialist scheme-level team** to help RCS implementers generate high quality data against RCS indicators since these data will require mixed methods (especially qualitative methods) expertise

Recommendations and guidance for the evaluation of RCS projects

1. Ensure that RCS implementers **establish a baseline of research capacity** against which to track progress and impact
2. Consider using **trends of an increase in pre-specified RCS outputs and outcomes** over time, to demonstrate that a project is on a trajectory to achieve impact
3. Explicit indicators for evaluating **RCS equity and inclusivity** should be included in RCS evaluations if these are important aspects of the project
4. Where relevant, projects should incorporate **indicators of sustainability** of research capacity improvements throughout a project lifetime
5. Incorporate **indicators of multi-disciplinarity** into RCS evaluations as this demonstrates the sophistication of research capacity of individuals, institutions and nations
6. Incorporate **RCS indicators that demonstrate employability** (e.g. innovation and entrepreneurship) since these attributes are important for achieving the longer-term goal of improving socio-economic development
7. Consider providing limited funding to **continue measurements after the end of a project** to improve understanding of what does/does not work for long term impact of RCS

General recommendations and guidance concerning principles of RCS evaluation

1. There should be a change in language and emphasis away from 'researchers and research support staff' towards **the 'research team'** in recognition of the important inter-dependency of the researchers, research managers and other members of the research team in strengthening research capacity
2. RCS evaluations need to **involve target users** so that the content of the evaluation, and the data collected and generated, meets their needs
3. RCS evaluation indicators need to be designed strategically and to be **robust, valid and valued**
4. RCS evaluations should balance **quantitative and qualitative indicators at all three levels** of the RCS evaluation to capture cultural, behavioural, attitudinal and systems changes
5. RCS evaluations need to affirm that it is the **'contribution' of a RCS investment rather than 'attribution'** that should be measured and that RCS impact occurs at scheme or programme level irrespective of the level at which RCS investment occurred (providing that RCS activities are aligned within an over-arching theory of change)
6. Emphasise through strategies and actions that the purpose of RCS evaluations is to **promote learning rather for accountability**

5 NEXT STEPS FOR MOVING FORWARDS

1. Make sure that new RCS programmes/schemes have an overarching theory of change (ToC) for achieving RCS impact and that a small number of the same important generic ToC-related indicators are included in every project within the scheme.

Lack of an over-arching theory of change for many RCS programmes is a major barrier to being able to demonstrate progress along a trajectory to achieve impact. It also limits funders' ability to commission a cohesive set of projects that all contribute to the overall RCS goal. Incorporating a few of the same carefully chosen ToC-related RCS indicators in every project, will enable comparisons to be made between projects within a scheme (and potentially between schemes) and allow collation of RCS data from across all projects. The indicators should be chosen so that they are valued by the RCS project implementers and are not too onerous. Provision of scheme-wide support to RCS implementers to collect good quality data against these indicators may be helpful.

2. Test the RCS framework and indicators

This project has identified a range of broad indicators (or RCS topics to which indicators could be applied) within each of the three levels of the RCS evaluation framework. Indicators-of-interest need to be selected by RCS scheme organisers and applied to new, and possibly existing, RCS initiatives. As this RCS evaluation approach is innovative and experimental it will be important to envisage the testing of the frameworks and indicators as a research project with prospective design, rigorous methods and robust data analysis. It will be important to also evaluate the skills, time and resources needed to produce data against these indicators to help funders decide when and how they should be applied to RCS evaluations.

3. Develop methods for measuring important RCS topic areas for which there are no existing valid and robust indicators

There are several RCS topic areas that have been identified through this project as important and generic, but for which there are no existing widely accepted measures. Many of the indicators for these topics are likely to be qualitative and so social science research skills will be needed to generate high quality data against the indicators. Examples include measures of graduates' critical thinking skills, confidence and empowerment in potential research leaders, multi-disciplinary research capability, and entrepreneurship.

4. Validation of project findings by other international RCS funders

RCS evaluations are problematic for many development funders and the findings from this project therefore have the potential to result in a step change in the way RCS evaluations are designed and

conducted globally. However, substantial data for this project were derived from an analysis of DFID-funded programme documents. It is therefore important to validate these findings beyond DFID programmes by applying a similar, though likely less intense, analysis of programmes and through a consultation process with international non-DFID funders.

6 CONCLUSIONS

The results of activities under objectives 1-3 have led to two main project outputs (a framework with indicators; novel concepts for better RCS programmes) and associated recommendations for actions that can contribute to improved evaluations to demonstrate the impact of RCS investments:

- An evidence-informed and validated over-arching **framework for evaluating RCS initiatives**, with a suggested list of **generic indicators** under each item in the framework. The framework and indicators could be used to harmonise RCS evaluations across a range of projects or programmes but will need to be tested and validated in practice in diverse contexts to assess their feasibility and usefulness, and to confirm that they can provide a mechanism for enabling comparisons of RCS achievements across projects and programmes
- **Novel concepts** for better design, tracking and evaluation of the impact of RCS investments across programmes with guidance about what will be required to implement these in practice
- Recommended **actions** to change the way that RCS initiatives are designed so that projects are aligned to, and measured against, an overarching scheme-level ToC, and to develop and test metrics for essential RCS indicators

7 ANNEXES

ANNEX 1: RCS EVALUATION FRAMEWORK AND INDICATORS VALIDATED THROUGH WORKSHOPS AND INTERVIEWS

Mapping of indicators within the evaluation framework

The indicators below are categorised according to the level at which they are targeted (individual, institutional, societal) and the components within the revised and agreed evaluation framework. The definitions used in this report for these levels are:

- Individual – individual members of a research team
- Institutional – institutes and organisations involved in generating research
- Societal (also described as 'environmental') – supra-institutional including sub-national, national and international

Level	Component	Impact (or high-level outcome) evaluation indicators	Qualitative or quantitative indicator	Examples of possible sources of evidence[4]
Individual[5]	Provision and quality of training for the research team	Quality of graduates from RCS programmes (e.g. technical capability, critical thinking skills, confidence, empowerment, employability) appropriate for their career stage[6]	Qualitative	
		Individualised training needs assessments conducted and reviewed	Qualitative	
		High-level mentoring obtained	Qualitative	
		Publication output: quantity and quality	Qualitative and quantitative	
		Tracking of cumulative learning including development of mentoring and ToT skills	Qualitative and quantitative	
		Contribution to post-graduate (research) curriculum design and delivery	Qualitative	

[4] These examples are purely illustrative suggestions that were mentioned during the course of the project; their inclusion does not imply that they have been validated for use in RCS evaluations or that they should be adopted

[5] Gender disaggregated

[6] Generic indicators at individual level should take account of seniority and be appropriate for career stage (i.e. early, mid and late career researchers)

Level	Component	Impact (or high-level outcome) evaluation indicators	Qualitative or quantitative indicator	Examples of possible sources of evidence[4]
	Recognition of research leadership/esteem	Increase in confidence and empowerment to take leadership positions	Qualitative and quantitative	
		Professional recognition	Qualitative and quantitative	- invitations as a speaker/adviser; - consulted with/by decision makers
		Research meets priority demands	Qualitative	
		Evidence of creating a research team	Qualitative	
		Protected research time	Qualitative	- % of paid versus unpaid time for research activities - time spent on administration versus research
		Innovate, transform and catalyse research	Qualitative	
		Able to create and/or manage multi-disciplinary teams	Qualitative	
		Ability to obtain nationally/internationally competitive grants	Quantitative	
		Ability to engage the general public in research and 'public' communities involved research	Quantitative	
	Career trajectory[7]	Upwards trajectory with evidence of progressing in chosen career (including non-academic)	Qualitative and quantitative	- Career ambitions versus options available - Entrepreneur-ism
		Stories/vignettes showing effects within and beyond academia	Qualitative	

[7] The career of individuals would need to be tracked to document their career pathways. There was a recognition that some funding agencies already have tracking systems in place.

Level	Component	Impact (or high-level outcome) evaluation indicators	Qualitative or quantitative indicator	Examples of possible sources of evidence[4]
		No of mentees for each RCS individual graduate	Quantitative	
		No of networks and collaborations joined or initiated	Qualitative and quantitative	
		Grants - numbers/value, diversity, trends	Quantitative	
		No of research projects engaged in	Quantitative	

Level	Component	Impact (or high-level outcome) evaluation indicators	Qualitative or quantitative indicator	Examples of possible sources of evidence[8]
Institutional	Career pathways for the research team	Career development opportunities available and used (by all research team members)	Qualitative and quantitative	
		Transparent and equitable process for selecting students	Qualitative	
		High staff retention rates	Quantitative	
		Transparent, equitable promotion criteria and processes, and career progression	Qualitative	
		Mentoring scheme (inter-generational) available and effective	Qualitative	
		Ability to create new posts and attract diaspora	Qualitative and quantitative	
	Sustainable provision of appropriate, high quality training	Training - Numbers/completions/ trends/ employment	Qualitative and quantitative	
		Quality of courses (including post-graduate and CPD)	Qualitative	
		Courses engage with employers and match their needs	Qualitative	
		Quality of graduates	Qualitative	
		Multi-disciplinary research capability	Qualitative and quantitative	
		% of masters students transitioning to PhD level, and PhDs to post-doc posts	Quantitative	
		Enrolment versus completion rates	Quantitative	
		Courses sustainably embedded in institutions	Qualitative	
	Nationally/internationally competitive research and grants	Consistent quality productivity (grants, publications, patents, start-ups, commercialisation)	Qualitative	

[8] These examples are purely illustrative suggestions that were mentioned during the course of the project; their inclusion does not imply that they have been validated for use in RCS evaluations or that they should be adopted

		Size, scope, diversity of funders, with upwards trends	Qualitative and quantitative	
		Institutional ranking (+ trends)	Quantitative	
		Availability, awareness (good internal communications) and utilization of research support systems	Qualitative	
		Diversity of applicants for research team positions	Quantitative	
		Ability (or on a trajectory) to support the 'research pipeline'[9] from basic science to community and behavioural change/industry uptake	Qualitative and quantitative	No. of Spin offs, licencing, patents
		Number, extent and activity of collaborations/networks	Qualitative and quantitative	
		Evidence of being policy-influencers and/or sought after for regional/national expertise	Qualitative	
	Research environment – finance, library, IT, labs etc[10]	Internal research-related policies, SOPs and strategies (e.g. for HR, finance, M+E, ethics/integrity, equity/gender) available, collaboratively developed and revised, and implemented	Qualitative and quantitative	
		RCS strategic plan, with funding, implemented and monitored	Qualitative and quantitative	
		Achievement of relevant standards/accreditation	Qualitative and quantitative	
		Vibrant, multi-disciplinary research culture (e.g. journal clubs, seminars, critiques)	Qualitative	

[9] https://en.wikipedia.org/wiki/Translational_research

[10] The indicators in this category have been selected to be generic but additional indicators may be needed for specific types of programmes (e.g. those that require laboratory facilities may draw indicators from international standards such as ISO, SLIPTA and GLP)

		Explicit mechanisms for allocating research overheads to support research infrastructure	Qualitative	
		% of budget spent on strengthening research systems	Quantitative	

Level	Component	Impact (or high-level outcome) evaluation indicators	Qualitative or quantitative indicator	Examples of possible sources of evidence[11]
Societal[12]	*National*: research councils/research productivity	Researcher: citizen ratio	Quantitative	
		Research collaborations/mobility	Quantitative and qualitative	
		Ability to manage transparent, efficient and competitive processes for allocating national research funds	Quantitative and qualitative	
		Research productivity (funds, publications, patents) + trends	Qualitative and quantitative	Data sharing platforms, biobanks, products to market
		National research funds (+ trends) and research agencies	Quantitative and qualitative	
		No of government policies on research/science/technology	Quantitative	
		National research portfolio covers research pipeline (i.e. basic science to societal change)	Quantitative	
		Innovations and entrepreneurship	Quantitative and qualitative	Patents, spin-off companies
	International: networks/ collaborations	Research hubs – number, diversity, esteem, infrastructure	Quantitative and qualitative	
		Research governance systems	Qualitative	
		Bilateral agreements as proxy measures of progress	Qualitative	
		International collaboration trends (north-south and south-south)	Qualitative	
		International researcher mobility	Qualitative	

[11] These examples are purely illustrative suggestions that were mentioned during the course of the project; their inclusion does not imply that they have been validated for use in RCS evaluations or that they should be adopted

[12] For less research-mature institutions, the focus of RCS efforts may be at national, or even sub-national level whereas for well-established research institutions there would be an expectation of profile and activities at international level

		International mentorship	Qualitative	
	Research impact and user engagement	Public engagement in research	Quantitative and qualitative	
		Research-influenced policies	Quantitative and qualitative	
		Recognition of role of research in development agendas	Qualitative	
		Perceptions and recognition of strengthening research capacity investments and activities	Qualitative	
		Evidence of local innovations impacting society	Quantitative	

ANNEX 2: TERMS OF REFERENCE

Guidance on Improving Research Capacity Strengthening (RCS) Evaluation Practice: annex to commercial proposal

Our understanding of the ToRs

DFID has invested over £155 million in research capacity strengthening (RCS) across 14 programmes. However, evidence about how to evaluate the impact of RCS programmes beyond the outcome level is virtually non-existent but is essential for DFID to demonstrate the effectiveness of these investments. **This project will synthesise current information on RCS and make and disseminate recommendations about how to better evaluate high-level outcomes and impact of such programmes, taking into account gender and inclusivity.** As part of a strategy to increase capacity in the African region for RCS evaluations, the project will be implemented in partnership with the African Population and Health Research Center (APHRC - http://aphrc.org/).

Methodology for deliverables/outputs (see table 1)

Deliverables/outputs 1 and 2

A list of DFID projects with substantial RCS components will be obtained from DFID. RCS-relevant theories of change from these as well as from CRU's current and past portfolio of RCS projects and an internet search of other projects will be used to extract potential outcome and impact evaluation indicators. A list of key informants with experience of conducting or (potentially) commissioning RCS evaluations will be drafted from these documents, discussions with DFID and CRU's own networks. Key informants will be interviewed (some possibly during UKDCR meeting in London on October 5th 2018) to collate their views and needs on RCS outcome-impact indicators and evaluations.

Deliverables/outputs 3

CRU has already collated a bank of >800 indicators from a systematic search of published and grey literature relating to RCS. No indicators were identified that had been designed to evaluate projects at impact level. Indicators from this list that focus on outcome-impact levels (since there may be none or very few that focus exclusively on impact) and have practical relevance for these ToRs will be extracted and supplemented by information from a rapid scoping review of published and grey literature. Relevant published literature will be identified using search engines such as PubMed, SCOPUS and google scholar. Grey literature will be identified from CRU's bank of resources and websites of organisations involved in RCS evaluations.

Deliverables/outputs 4 and 5

The information from outputs 1-3 will be used in conjunction with our previous review of RCS frameworks[13] to develop a novel framework for evaluating impact and high-level outcomes for RCS projects. Due to the dearth of impact-level indicators in the literature, the framework will include not only published high-level outcome indicators but also inferred and postulated impact-level indicators. The validity and practicality of the framework and indicators will be checked during workshops in Nairobi and UK involving 10-15 participants selected on the basis that they have experience of RCS evaluations or that they are in an organisation that commissions, funds or manages, and therefore

[13] http://www.health-policy-systems.com/content/11/1/46

needs to evaluate, large RCS programmes. If possible, these workshops will be tagged onto relevant meetings to reduce costs.

Deliverables/outputs 6 and 7

Findings from outputs/deliverables 1-5 and revisions to the RCS evaluation framework and indicators in response to feedback from the workshops, will be summarised in a draft report. The report will include recommendations based on the accumulated evidence, to improve RCS evaluation practice and investments in RCS, and will reflect DFID's policies on gender and inclusive development. The report will be finalised following feedback from the DFID programme team (CK and EM). In addition to preparing a summary for R4D and face to face meetings to present key findings to key stakeholders, for example, DFID staff, UKRI and UKCDR (see 'intended audience' in ToRs), results from this project will also be re-packaged so they can be shared on websites and via social media.

Table 1. Deliverables, Outputs and Timings – 7 month project (start date 17th September 2018 and no expenditure beyond 31st March 2019)

Deliverables	**Proposed Timeline**	**Actual Dates**
Project and interview list	Month 1-2	Nov 1- Dec 31
Scoping review	Months 1-2	Nov 1st 2018 - Jan 15th 2019
Draft workshop PowerPoint Presentation (for review by DFID as interim 'draft report' to trigger first payment)		February 2019
Validation workshop (Nairobi; tagged onto AAS research management group meeting, TBC)* Validation workshop/discussions (London, TBC)	Month 3 Month 3-4	February 2019 (TBC) Feb-March 2019
Draft report for comments by Eunice, Andrew and Yaso (steering group)	Month 4	March 18th, 2019
Final report incorporating steering group feedback	Month 5	March 31st , 2019
Presentations to DFID & UKCDR RCS Group	Months 6-7	March – April 2019**

* AAS Research Management group (UKRI, DHSC, Royal Society, DFID, Wellcome, etc) will also include key stakeholders from the region: scheduled week of February 18th in Nairobi
**day trip to UKCDR meeting in April 2019 is at no cost since it is beyond the project end date

Note – additional deliverables and timeplan adjustments agreed since finalisation of TORs

March 8th 2019: PowerPoint presentation highlighting the process and the key findings thus far, key recommendations and dissemination plans

March 18th 2019: Draft full report only to EM: near-final draft report to steering group o include feedback from interviews scheduled after March 15th

April 16th 2019: UKCDR meeting

Personnel roles and inputs (see table 2)

CRU-LSTM will have overall responsibility for the project. AK, a post-doc from APHRC, will be seconded to CRU and based in Liverpool for a substantial part of the project as part of a strategic partnership to strengthen APHRC's capacity for RCS evaluations. She will be the main person responsible for producing deliverables, under the supervision of IB and JP in Liverpool and EG in Nairobi. She will also be responsible for organising workshops with help from the administrative teams in the two locations and for collaborating with SC to produce dissemination materials.

All personnel will be available to provide the required services for the duration of the contract. See end for CVs of key personnel.

Table 2. Personnel roles and inputs

Name/initials	**Role**	**Person days**
CRU-LSTM employed		
Imelda Bates / IB	Overall responsibility for project, academic oversight	12
Justin Pulford / JP	Day to day supervision of AK	16
Susie Crossman / SC	Dissemination and communications	5
Administrative support AS-CRU *Lorelei Silvester (CRU Programme Manager) and Sheryl Ramos (CRU Administrator)*	Financial and HR issues, travel logistics and workshops	10
APHRC employed		
Evelyn Gitau / EG	Overall responsibility for APHRC inputs to project	10
Anne Khisa / AK	Post-doc researcher; seconded to CRU for 3-4 months; primary responsibility for all outputs	150
Administrative support AS-APHRC *Janet Moraa (Programme Accountant) and Lisa Omondi (Programme Assistant)*	Financial and HR issues at APHRC, travel logistics and workshops	10

Additional notes

The project team have no disclosures or conflicts of interest to declare

CVs of key personnel


CV Gitau 2018.docx


CV Khisa 2018.docx


CV Bates 2018.doc


CV Pulford 2018.docx

ANNEX 3: PAPERS SELECTED FOR LITERATURE REVIEW

Author	Year of publication	Publication title	Type of publication
Adam et al	2018	ISRIA statement: ten-point guidelines for an effective process of research impact	
Boyd et al	2013	Frameworks for evaluating health research capacity strengthening: a qualitative study	Primary/ Original Publication
Buist & Parry	2013	The American Thoracic Society Methods in Epidemiologic, Clinical, and Operations Research Program. A Research Capacity-Building Program in Low- and Middle-Income Countries	Primary/ Original Publication
Cash-Gibson et al	2015	SDH-NET: a South–North-South collaboration to build sustainable research capacities on social determinants of health in low- and middle-income countries	Primary/ Original Publication
Cole et al	2014	Dilemmas of evaluation: health research capacity initiatives	Perspectives/ Opinion/ Commentary
Cole et al	2014	Indicators for tracking programmes to strengthen health research capacity in lower- and middle-income countries: a qualitative synthesis	Primary/ Original Publication
Elmusharaf et al	2016	From local to global: a qualitative review of the multi-leveled impact of a multi-country health research capacity development partnership on maternal health in Sudan	Primary/ Original Publication
ESSENCE	2016	Planning, Monitoring and Evaluation Framework for Research Capacity Strengthening	Systematic/ scoping Review
Fonn et al	2016	Building the capacity to solve complex health challenges in sub-Saharan Africa: CARTA's multidisciplinary PhD training	Primary/ Original Publication
Haynes et al	2018	What can we learn from interventions that aim to increase policy-makers' capacity to use research? A realist scoping review	Systematic/ scoping Review
Henschke et al	2017	Strengthening capacity to research the social determinants of health in low- and middle-income countries: lessons from the INTREC programme	Primary/ Original Publication
Hofman et al	2015	Addressing research capacity for health equity and the social determinants of health in three African countries: the INTREC programme	Primary/ Original Publication

Hyder et al.	2016	The Road Traffic Injuries Research Network: a decade of research capacity strengthening in low- and middle-income countries	Perspectives/ Opinion/ Comentary
Marjanovic et al	2017	Evaluating a complex research capacity-building intervention: Reflections on an evaluation of the African Institutions Initiative	Perspectives/ Opinion/ Comentary
Martín-Bermudo	2017	DrosAfrica: Building an African biomedical research community using drosophila	Systematic/ scoping Review
Memiah et al	2018	Bridging the Gap in Implementation Science: Evaluating a Capacity-Building Program in Data Management, Analysis, Utilization, and Dissemination in Low- and Middle-Income Countries	Primary/ Original Publication
Nyika et al	2009	Capacity building of ethics review committees across Africa based on the results of a comprehensive needs Assessment survey	Primary/ Original Publication
Obuku et al	2018	Use of post-graduate students' research in evidence informed health policies: a case study of Makerere University College of Health Sciences, Uganda	Primary/ Original Publication
Oduola et al	2018	Outcome of capacity building intervention for malaria vector surveillance, control and research in Nigerian higher institutions	Primary/ Original Publication
Scanes et al.	2009	Output or impact: What should we be evaluating in research programs?	Perspectives/ Opinion/ Commentary
Scoble et al	2010	Institutional Strategies for Capturing Socio-Economic Impact of Academic Research	Systematic/ scoping Review
Struyk et al	2011	Evaluating Capacity Building for Policy Research Organizations	Primary/ Original Publication
Temple et al	2018	Assessing impacts of agricultural research for development: A systemic model focusing on outcomes	Primary/ Original Publication
Thomson et al	2016	Applied statistical training to strengthen analysis and health research capacity in Rwanda	Primary/ Original Publication
Zachariah et al	2017	Building Global Capacity for Conducting Operational Research Using the SORT IT Model: Where and Who?	Primary/ Original Publication

ANNEX 4: LIST OF PROGRAMMES THAT PROVIDED DOCUMENTS FOR ANALYSIS

Name of project	DFID; Other funder (OF); Not programme specific (NPS)	Stand alone or Embedded RCS
Climate Impacts Research Capacity and Leadership (CIRCLE)	DFID	Stand alone
East Africa Research Hub: Strengthening research systems for poverty reduction	DFID	Stand alone
BCURE Harvard/ India ,Afghanistan, Pakistan	DFID	Stand alone
BCURE INASP led consortium Ghana, Zimbabwe, South Africa	DFID	Stand alone
BCURE Africa Cabinet Decision-Making Programme (ACD) Sierra Leone, Liberia, South Sudan	DFID	Stand alone
BCURE - AFIDEP Strengthening Capacity for Use of Research Evidence in Health Policy (SECURE Health) Kenya, Malawi	DFID	Embedded
BCURE SA Malawi	DFID	Stand alone
Building Capacity to Use Research Evidence (BCURE)	DFID	Stand alone
Development Research Uptake in Sub Saharan Africa (DRUSSA)	DFID	Stand alone
Centres For Learning On Evaluation And Results (CLEAR)	DFID	Stand alone
Twende Mbele (“Going Forward Together”) – Strengthening African Monitoring and Evaluation Systems	DFID	Stand alone
Partnership for African Social and Governance Research (PASGR)	DFID	Embedded
DFID support to the African Economic Research Consortium (AERC)	DFID	Embedded
Capacity for Economic Research and Policy making in Africa (CERPA) Support to AERC and PEP 2015-2020	DFID	Stand alone
African University Research Approaches (AURA)	DFID	Stand alone
Policy Analysis on Growth and Employment (PAGE)	DFID	Stand alone
Health Research Capacity Strengthening Initiative (HRCS) Kenya	DFID	Embedded
Health Research Capacity Strengthening Initiative (HRCSI) Malawi	DFID	Stand alone
African Institute for Mathematical Sciences (AIMS): Next Einstein Initiative	DFID	Stand alone
Global Strategy for Improving Statistics for Food Security, Sustainable Agriculture and Rural Development.	DFID	Embedded
Enhanced Data Dissemination Initiative (EDDI)	DFID	Embedded
International Household Survey Network (IHSN) and Accelerated Data Programme (ADP)	DFID	Embedded
Statistics for Results Facility	DFID	Embedded
Improving Collation, Availability, Dissemination of Nat Dev Inc MDG Indicators.	DFID	Embedded
Trust Fund for Statistics Capacity Building (TFSCB)	DFID	Embedded
Strategic Partnerships for Higher Education Innovation and Reform (SPHEIR)	DFID	Stand alone
Strengthening Evidence for Development impact	DFID	Unable to categorize
Development Research Uptake in Sub-Saharan Africa (DRUSSA)	DFID	Stand alone

Royal Society-DFID Africa Capacity Strengthening Initiative	DFID	Embedded
Strengthening Research Knowledge Systems (SRKS)	DFID	Unable to categorize
Understanding Knowledge Systems	DFID	Unable to categorize
Royal Society Leverhulme Africa Awards	OF	Unable to categorize
Building Leading Organizations evaluation (IDRC)	OF	Unable to categorize
SIDA bilateral research capacity building	OF	Unable to categorize
MRC/DFID African Leaders Scheme	OF	Unable to categorize
Science Councils Granting Initiative	NPS	Unable to categorize
UKCDR resources (several)	NPS	Unable to categorize

ANNEX 5: VALIDATION WORKSHOP AT APHRC CAMPUS, NAIROBI

The workshop consisted predominantly of group discussions followed by plenary feedback after each of four sessions. The participants were provided with an introductory PowerPoint presentation and printed hand-outs showing examples of RCS evaluation indicators by framework level to help prompt discussions. Discussion points and additional RCS evaluation indicators that emerged during the feedback sessions, and suggestions for adaptations to the draft RCS evaluation framework, were recorded on flip charts and notes which were typed up.

Workshop Agenda

Impact Indicators for Research Capacity Strengthening Initiatives Workshop
Date: February 20th, 2019

Background

For decades, the DFID and other funding agencies have invested in initiatives that strengthen the research capacity of African scientists in health. As a result, many individuals and organisations are now able to conduct research, and institutional and national research systems have improved over time. Often, the RCS initiatives have been evaluated at output and outcome levels. However, there is an increasing need to have in a place a framework of indicators for evaluating impact of RCS initiatives. In this regard, DFID has commissioned a scoping review of published and grey literature published on the topic resulting in a framework of impact indicators. This work has been conducted by the African Population and Health Research Centre (APHRC) in partnership with the Liverpool School of Tropical Medicine (LSTM). As the next step, we would like to invite experts working the area of Health Research Capacity Strengthening in Africa to validate the framework.

Objectives

The objectives of the workshop are to:

1. Agree on the common indicators used to measure impact of RCS initiatives
2. Elicit/ collate additional indicators being used to measure impact of RCS initiatives

Workshop Program

Time	Topics	Person responsible
8:45 - 9:00 am	*Coffee and Registration*	*APHRC Admin*
9:00 - 9:30 am	Welcome & Introduction of Participants	EG
9:30 - 9:40 am	Background to the project impact indicators for RCS	EM
9:40 – 10:05 am	Explain purpose, objectives, structure of the workshop in RCS impact indicators and anticipated outcomes	IB
10:05 - 10:20 am	Development and structure of the framework: an overview	AK
10:20 – 10:35 am	*Health break*	*APHRC Admin*
10:35 -12:00 pm	Discussion of impact indicators at individual level	AK/IB
12:00 -1315 pm	Discussion of impact indicators at institutional/ organisational level	AK/ IB
13:15 -14:00 pm	*Lunch break*	*APHRC Admin*
14:00 – 15:45 pm	Discussion of impact indicators at environmental /societal level (includes coffee break)	AK/ IB
15:45 -1600 pm	Conclusion and way forward	IB

List of Participants at Validation Workshop at APHRC Campus, Nairobi, 20th February 2019

	Name	Organization	Designation
1.	Allen Mukhwana	African Academy of Sciences (AAS)	Research Systems Manager
2.	Meshack Mutua	African Academy of Sciences (AAS)	M& E Officer
3.	Patrick Atandi	African Academy of Sciences (AAS)	M& E Lead for DELTAS
4.	Pauline Ngimwa	The Partnership for African Social and Governance Research (PASGR)	Head and Programme Manager, Professional Development and Training
5.	Beatrice Muganda	The Partnership for African Social and Governance Research (PASGR)	Director, Higher Education
6.	Loise Ochanda	International Development Research Centre (IDRC)	Program Management Officer
7.	Diakalia Sanogo	International Development Research Centre (IDRC)	Senior Program Specialist, Technology and Innovation
8.	Wanjiru Kamau-Rutenberg	African Women in Agricultural Research and Development (AWARD)	Director
9.	Anne Kingiri	African Centre for Technology Studies (ACTS)	Director of Research
10.	Florah Karimi	African Population and Health Research Centre (APHRC)	Program Manager, CARTA
11.	Marta Vicente-Crespo	African Population and Health Research Centre (APHRC)	Program Manager, CARTA
12.	Eunice Muthengi	Department for International Development (DFID)	Deputy Head, East Africa Research Hub, Research and Evidence Division
13.	Natasha Bevan	Royal Society, UK	Head of International Grants
14.	Aaron Yarmoshuk	University of Toronto	Adjunct Lecturer, Dalla Lana school of Public Health
15.	Uwizeye Dieudonne	APHRC	Postdoctoral fellow, APHRC

List of facilitators for Validation Workshop at APHRC Campus, Nairobi, 20th February 2019

Imelda Bates	Liverpool School of Tropical Medicine	Imelda.Bates@lstmed.ac.uk
Anne Khisa	African Population and Health Research Centre (APHRC)	guest190@aphrc.org or akhisa@cartafrica.org
Evelyn Gitau	African Population and Health Research Centre (APHRC)	egitau@aphrc.org
Lisa Omondi	African Population and Health Research Centre (APHRC)	lomondi@aphrc.org

PowerPoint Presentation
..\Workshop\RCS Impact Indicators workshop Presentation 19feb19 .pdf

Hand-outs
..\Workshop\Final Print handouts\Individual Level RCS Impact Indicators.docx
..\Workshop\Final Print handouts\Institutional Level RCS Impact Indicators.docx
..\Workshop\Final Print handouts\Societal Level RCS Impact Indicators.docx

ANNEX 6: VALIDATION WORKSHOP WITH GRMP PARTICIPANTS, NAIROBI

The purpose of this workshop was for participants to review the revised RCS evaluation framework derived from the first workshop, to suggest any additional indicators, and to share their experience of using such indicators in practice. A shorter version of the workshop 1 (20th February) PowerPoint presentation was used and participants were provided with the hand-outs of RCS indicators, one handout for each of the three RCS focus levels (individual institutional, societal). The meeting proceedings were recorded on flip charts and notes, and later typed out.

Participants list

Research Management Programme in Africa (ReMPRO Africa) Global Stakeholders Workshop at Crowne Plaza Hotel, Upper Hill, Nairobi, 21 – 22 February 2019

Name	Institution	Designation
Aaron Yarmoshuk	University of Toronto	Adjunct Lecturer, Dalla Lana school of Public Health
Afua Yeboah	University of Ghana	Senior Assistant Registrar
Allen Mukhwana	The African Academy of Sciences	Research Systems Manager
Alphonsus Neba	The African Academy of Sciences	Deputy Programmes Director, Science Support & Systems
Anita Chami	The African Academy of Sciences	Programme Assistant, Office of the Director of Programmes
Anteneh G Mekonen	Amauer Hansen Research Institute, Ethiopia	Finance & Procurement Director
Bassirou Bonfoh	African Science Partnership for Intervention Research Excellence	Director
Deborah-Fay Ndhlovu	The African Academy of Sciences	Communications Manager
Dembo Kanteh	MRC Unit The Gambia at the London School of Hygiene and Tropical Medicine	Grants Management
Edward Abira	The African Academy of Sciences	Programme Officer, Good Financial Grant Practice (GFGP)
Ernest Aryeetey	African Research Universities Alliance (ARUA)	Secretary General
Eunice Fonyuy Fondze-Fombele	University of Buea	Senior Lecturer of African Literatures and Cultural Studies
Eunice Muthengi	UK Department for International Development (DFID)	Deputy Head, East Africa Research Hub
Exnevia Gomo	University of Zimbabwe	Associate Professor, College of Health Sciences
Garry Aslanyan	World Health Organisation	Manager of Partnerships and Governance TDR
Genny Kiff	Wellcome Trust	Senior Advisor
Grace Mwaura	The African Academy of Sciences	Programme Cordinator, Affiliates
Harriet Nambooze	Makerere University	Programme Coordinator of THRiVE-2, College of Health Sciences
Henry Tumwijukye	Global Research Administration & Management Services	Director
Janet Kariuki	The African Academy of Sciences	Executive Assistant to the Executive Director
Jennifer Maroa	The African Academy of Sciences	Programme Manager, Human Heredity and Health in Africa (H3A)
John Kirkland	National Institute for Economic and Social Research (NIESR)	Chief Operating Officer

Josepha Foba	University of Buea	Associate Professor of Chemistry and Head of the Chemistry Department
Judy Omumbo	The African Academy of Sciences	Programme Manager, Affiliates and Postdoctoral Fellowships
Juliette Mutheu-Asego	The African Academy of Sciences	Head of Communication and PR
Labode Popoola	University of Osun	Vice Chancellor
Lillian Mutengu	The African Academy of Sciences	Community and Public Engagement Manager
Linsey Dickson	University of Stirling	Head of Research Development & Performance
Marta Tufet	UK Collaborative on Development Research (UKCDR)	Executive Director
Nadia Tagoe	Kwame Nkrumah University of Science and Technology	Grants and Research Manager
Natasha Bevan	The Royal Society	Head of International Grants
Nelson Torto	The African Academy of Sciences	Executive Director
Ndeye Coumba Toure EP Kane	Dakar University	Professor of Microbiology and Bacteriology Virology
Ole Olesen	EDCTP	Director of International Cooperation
Patricia Makepe	Botswana International University of Science and Technology (BIUST)	Director of the Centre for Business Management, Entrepreneurship and General Education
Peter Mwita	Machakos University	Deputy Vice Chancellor, Research, Innovation and Linkages
Sapna Marwaha	University of Nottingham	Head of Research Contracts,
Simon Ndoria	The African Academy of Sciences	Programme Officer, Grand Challenges Africa (GCA)
Thomas Kariuki	The African Academy of Sciences	Director of Programmes
Tom Drake	UK Department for International Development (DFID)	
Vincent Nkundimana	The African Academy of Sciences	Programme Officer, Good Financial Grant Practice (GFGP)
Yogeshkumar Naik	National University of Science & Technology	Director of the Research & Innovation Office
Yolande Harley	University of Cape Town	Health Sciences Faculty Manager: Research Enterprise,

List of facilitators of RCS Impact Validation session at Crowne Plaza Hotel, Nairobi, 22nd February 2019

Imelda Bates	Liverpool School of Tropical Medicine	Imelda.Bates@lstmed.ac.uk
Anne Khisa	African Population and Health Research Centre (APHRC)	guest190@aphrc.org or akhisa@cartafrica.org

PowerPoint presentation
..\Workshop\RCS Impact Indicators session for 22feb19 draft 21feb19.pdf

Hand-outs
..\Workshop\Final Print handouts\Individual Level RCS Impact Indicators.docx
..\Workshop\Final Print handouts\Institutional Level RCS Impact Indicators.docx
..\Workshop\Final Print handouts\Societal Level RCS Impact Indicators.docx

ANNEX 7: NOTES FROM A MEETING OF UKCDR RESEARCH CAPACITY STRENGTHENING GROUP ON 26TH APRIL 2019

The two figures (6 and 7) were a stimulus for a lot of discussion. They were seen as innovative and providing useful food for thought, although they also raised some concerns about how they might be implemented. Two main concerns were that they may promote a 'top-down' approach to assessment if project/programme activities required adherence to a rigid ToC and associated indicators (i.e. top level ToC restricting learning and innovation). The second issue related to the potential for measurement bias towards activities with indicators that were easy to measure, if a rigid, 3 level indicator model was applied. Interestingly, these comments were framed in a concern that RCS assessment should be 'learning' focused as opposed to 'accountability' focused, which was widely endorsed by the audience. Similarly, there was also widespread opinion that 'attribution' was not an appropriate aim in RCS evaluation; rather, 'contribution' was a better fit. In addition, there was some discussion on the potential for tracer studies to provide insight into the value of individual level RCS interventions.

ANNEX 8: LIST OF INTERVIEWEES FOR VALIDATION OF FRAMEWORK AND INDICATORS

Name	Position
Hans Hagen	Deputy Director of the Center for Global Health, Institut Pasteur, Paris
Simon Kay	Head of international Operations and Partnerships, Wellcome Trust, UK
John Kirkland	Chief Operating Officer, National Institute of Economic and Social Research, London
Ole F Olsen	European and Developing Countries Clinical Trials Partnership
Heidi Peterson	Senior Evidence and Evaluation Manager, UKRI

ANNEX 9: LIST OF POTENTIAL GENERIC RCS IMPACT INDICATORS EXTRACTED FROM PROJECT DOCUMENTS (BEFORE VALIDATION)

Individual level impact indicators

1. Percentage of students enrolled in STEM fields at Master's level, disaggregated by gender
2. Percentage of programme clients who rate the extent to which they applied concepts learned or made changes in their current work as a result of the programme activity highly (4 or 5 on 5 point scale), as measured through tracer studies
3. Number of programme-supported researchers who experienced career-promoting events, leading to increased policy influence.
4. Level of engagement between programme award-holders and policymakers in African partner countries and UK
5. Level of engagement between programme award-holders and industry in African partner countries and internationally.

Institutional level impact indicators

1. Higher Education Innovations contributing more effectively to economic development and growth, public institutions and civil society

Societal level impact indicators

1. Number of success story case studies completed of priority cross-cutting policy decisions that were demonstrably influenced by research evidence and have been implemented (cumulative total for pilot countries)
2. Growth index of scientific production in East Africa
3. Government investment in research and development in East Africa
4. Support more effective poverty reduction and development by making more and better data available to support decision making.
5. Trends in governance performance in select African countries where programme is substantially engaged
6. Trends in improvement of the quality and supply of African research through numbers of citations of social science published research.
7. Number of occurrences of policy design/change based on project findings and in favour of inclusive growth and/or women's economic empowerment
8. Number of improved service delivery initiatives linked to programme (cumulative)
9. Number of countries in which more than one parliamentary committee is systematically using M&E information linked to programme

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