

NIHR Centre for Environmental Change
and Non-Communicable Diseases

RESEARCH CAPACITY STRENGTHENING
STRATEGY

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EC-NCD Centre RCS Strategic Vision

Our research capacity strengthening (RCS) strategy was designed after consultation with our academic collaborators, as well as the communities, policymakers, and multilateral organisations working in the health and environment sectors in each of the focus countries. We developed an RCS assessment tool to inform our strategic direction and ensure that our actions will meet locally articulated RCS priorities. This tool, as well as the capacity building strategy that was borne out of the audit and consultations with individuals and teams, builds on our successful history of RCS and community engagement and involvement (CEI) program delivery, and draws on an established RCS framework endorsed by the United Nations Development Program and RCS guidance from the UK Foreign Commonwealth Development Office (FCDO; formerly DFID).

Figure 1 highlights each of the four levels targeted by this RCS framework, as well as the key beneficiaries and types of RCS activities at each level. The following operational definitions were adopted for each level of RCS activity:

1. **Individual** refers to RCS activities targeted at building capacity in core research skills for research staff, including pre-doctoral, doctoral, post-doctoral early and mid-career researchers, and senior academics.
2. **Institutional** refers to RCS activities targeted towards organisational strengthening, such as financial management, program management, human resource management, communication and research promotion, and internal monitoring and governance processes for research quality assurance, professional development, and diversity and inclusion.
3. **Network** refers to RCS activities targeted at those close collaborators of the aforementioned individuals and institutions. Close collaborators include community members, community service organisations, Government representatives, non-government organisations, advocacy groups, and the media
4. **Ecosystem** refers to RCS activities that bring together national, regional, and global stakeholders in the evidence to policy environment for knowledge exchange and shared learning. Stakeholders include international multilateral organisations such as the United Nations and the World Health Organisation and global collaborative platforms such as the Global Alliance for NCDs, regional hubs such as the Southeast Asia Regional Office for the WHO, and academic and policy representatives from neighbouring countries.

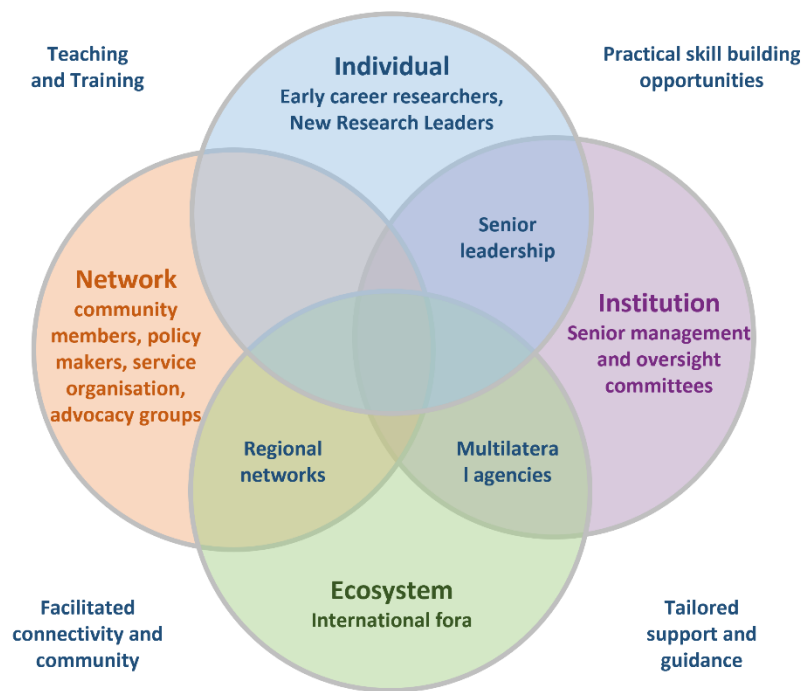


Figure 1: Multi-level Research Capacity Strengthening strategic design schematic.

Our RCS strategy encompasses country-specific activities at each level, as well as cross-country activities that target capacity gaps at each level of the evidence-to-policy ecosystem for each country partner and their collaborators.

Building Research Capacity

Individual-level RCS

We will support individual researcher development in two demographics: (1) **Early Career Researchers** (MSc, PhD, research fellow, research associate or equivalent) (2) **New Research Leaders** (lecturer/senior lecturer or equivalent research experience). Figure 2 provides an overview of the targeted activities for all individual researchers affiliated with the Centre and the additional enhanced offering available to New Research Leaders, and the collective prospective impact of these activities on enhancing local academic capacity to tackle the dual challenge of environmental change and the rising burden of NCDs. This model draws on the framework developed by The Public Health Leadership and Implementation Academy for Noncommunicable Diseases (Galaviz et al., 2019) and combines teaching and training activities in both leadership and academic research competencies with practical skill-building opportunities in both domains.

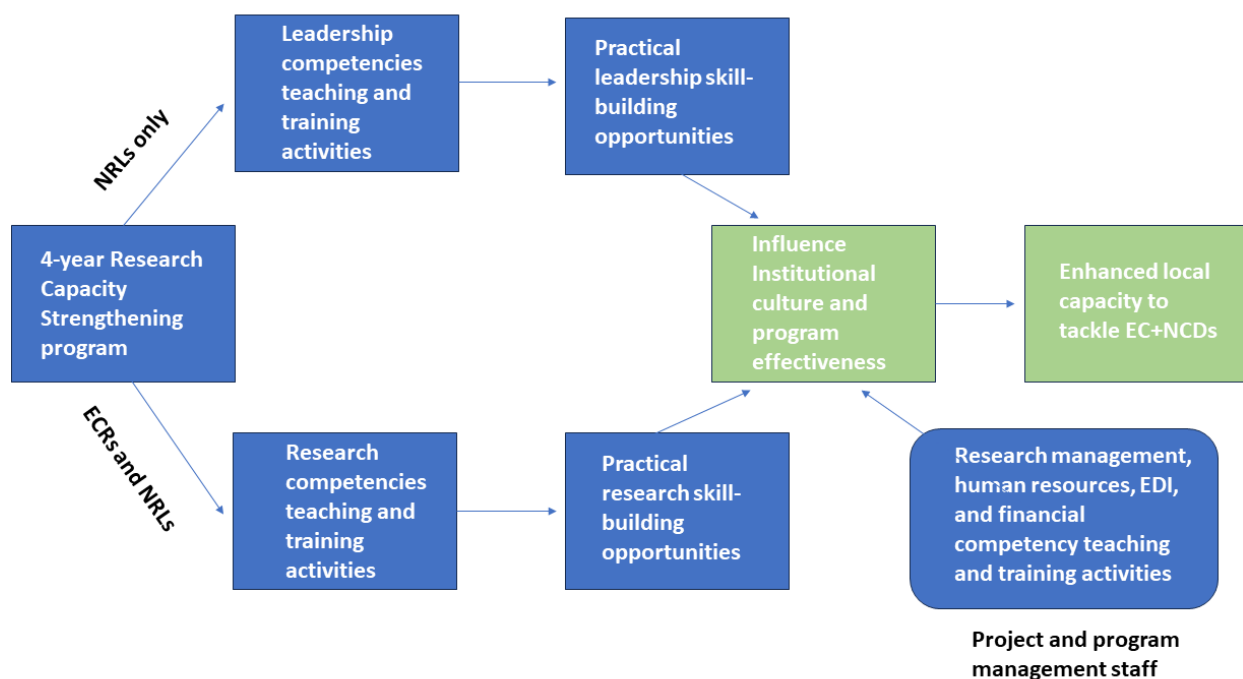


Figure 2: Schematic of individual-level RCS strategic model, based on the Public Health Leadership and Implementation Academy program model developed by Galaviz et al (2019).

Key: NRL – New Research Leaders; ECR – Early Career Researchers; EC+NCDs – Environmental Change and Non-Communicable Diseases; EDI – Equality Diversity and Inclusion.

An overview of the specific RCS activities targeted at individuals provided in Table 1 below:

| RCS activity | For whom? | By Whom? |
|--|------------------|---|
| Dual National/International supervision model | ECRs (PhD, MSc*) | 1 x local supervisor from local country University + (at least) 1 x external supervisor from either TGI, ICL, or both. *MSc students will have 1 x local supervisor as standard. An additional international supervisor may be allocated, however this will be assessed on a case by case basis dependent upon availability of international faculty, topic of MSc research, and type and intensity of project proposed. |
| International mentorship | NRL | External leadership mentor from professorial-level academic staff at either TGI or ICL |
| Individualised training plan development | ECRs and NRLs | The supervision team, the RCS Manager and country-level RCS Centre leads |
| Substantial teaching and training opportunities | ECRs and NRLs | All EC-NCD institutional partners, via an online training portal and face-to-face teaching workshops |
| Specialised training in leadership | NRL | The ICL Learning and Development Centre |
| Practical skill-building opportunities | ECRs and NRLs | The supervision team, the RCS Manager and country-level RCS Centre leads |

| | | |
|---|---------------|--|
| International sabbatical opportunities | NRLs | The supervision team, the RCS Manager and country-level RCS Centre leads will arrange a number of sabbatical opportunities to work with global leaders in diverse fields of research |
| Competitive research funding support | NRLs | EC-NCD Centre internal seed funding rounds |
| Facilitated conference participation | ECRs and NRLs | The supervision team, the RCS Manager and country-level RCS Centre leads will support staff and students to present their work at National and International events |
| Facilitated 'community of practice' in EC+NCDs | ECRs and NRLs | The RCS Manager and country-level RCS Centre leads |

Table1: Overview of targeted RCS activities at 'individual' level

ECR and NRL recruitment and enrolment

To ensure that our Centre attracts the best talent, partner institutions are encouraged to hold a competitive recruitment process for any MSc and PhD studentships and new positions affiliated to The Centre. The NRLs must be employed at one of the partner institutions. The recruitment should follow The Centre's Diversity and Inclusion Statement (Appendix X) and ensure gender equity as much as possible. The Centre governance team will monitor and report on diversity and career progression in all staff and students across academic career structures.

Early career researcher supervision

The Centre will provide Early Career Researchers (ECRs) with a dual internal/external supervision model, with an institutional primary supervisor and a secondary supervisor from either The George Institute for Global Health (TGI) or Imperial College London (ICL).

Teaching and learning

We will capitalise on the technical expertise of our diverse cross-country program team, as well as ICL's suite of Massive Open Online Courses (MOOCs) on the online platform Coursera, to deliver a comprehensive package of teaching and learning activities. Teaching and training programs will be tailored to provide contextually relevant learning opportunities and build on both lead institutions' existing bank of in-person, online, and blended teaching and training resources, such as those produced by TGI's Centre for Operational Research Excellence (CORE), and ICL's Global Masters in Public health (GMPH), which have already had a high rate of internal and external engagement and positive user feedback.

All Early Career researchers will be expected to complete a core set of online teaching modules.

These modules are as follows:

1. Introduction to environmental science

2. Environmental impact assessment
3. Research methods
4. Implementation science
5. Participatory approaches to research
6. Research engagement and impact

Numerous other taught courses will be delivered through the Centre RCS training team, and individuals will be kept informed regarding opportunities to engage in these. Courses may be either specialised to a given field of research, intervention, or analytical technique, or more generalist within a broad topic area.

Mode of teaching delivery

The EC-NCD Centre will be developing a central online repository of teaching and training materials, standard operating procedures, and useful documentation and guidance material via the online learning platform Moodle. All students and staff affiliated with The Centre will be provided with an account and invited to set-up their own unique log-in details.

Teaching and learning will be delivered using hybrid approach combining online and face to face delivery. Online delivery will be both asynchronous (i.e. materials available online to be accessed by the learner in their own time) and synchronous (i.e. 'live' learning webinar with interaction between the teaching staff and students). Face to face teaching will require travel for either the students, teaching staff or both, and will therefore be planned well in advance with at least 3 months' notice given to all parties. All face-to-face teaching courses will be agreed between the Centre RCS manager and local RCS managers.

All those developing and delivering new courses as part of The Centre activities, whether in-person or online, must complete a course specification form (see Appendix) which clearly articulates the focus area of the content, the specific learning goals and objectives, intended learning cohort, mode of delivery, length of delivery, and the outcomes of the course in relation to the strategic goals and objectives of The Centre.

Bespoke leadership training – New Research Leaders

We will develop a bespoke leadership training and support package that hinges on two primary activities 1) Honorary affiliation as adjunct faculty with Imperial College London and enrolment into targeted professional development training opportunities; and 2) pairing with an international professorial-level expert in the candidate's field of interest, with potential sabbatical opportunity at the mentor's institution.

Honorary affiliation as Imperial College London adjunct faculty

The Centre will make arrangements for all NRLs to be appointed as honorary faculty to Imperial College's prestigious School of Public Health and provided with an Imperial College London email address. This honorary appointment facilitates access for each of the NRLs to ICL's internationally-recognised Centre for Continuing Professional Development, which provides a diverse range of intensive short courses for professionals working in science, technology, medicine and management; and the Postdoc and Fellows Development Centre, which is dedicated to supporting postdoctoral research staff to build successful careers in research through individual support, online resources, courses, workshops, and events. Each NRL will be enrolled in ICL's 'Leadership and Management' course, which covers 8 modules: 1) leadership and management; 2) power and political interference; 3) management and leadership competencies; 4) emotional intelligence; 5) management foundations; 6) Leadership styles Overview; 7) Integration and action; and 8) Force field analysis. As Imperial faculty, NRL's will also have access to tens of thousands of professionally-relevant courses via institutional subscriptions to both LinkedIn learning and Coursera for Campus.

International mentorship

Each NRL will be matched with an internationally-recognised professorial-level mentor in their field of interest from either Imperial College London or The George Institute for Global Health. NRLs and their mentors are expected to communicate on a weekly basis and meet at least once per month via videocall. NRLs will co-develop a set of professional goals with their mentor(s), which they will be supported to work towards achieving.

Sabbatical opportunity

NRLs will be able to undertake a sabbatical opportunity in order to spend time at their mentor's institution. Specific details regarding funding, timing and length of the sabbatical to be arranged on a case by case basis between the NRL's home institution, the mentor's institution, and the Centre RCS manager. Activities undertaken during the sabbatical period will align with the professional goal's set by the NRL and their mentor articulated in their career development plan.

Seed funding opportunities

Seed funding will be available to NRL's to competitively apply for through The Centre in order to undertake a chosen research project. All project proposals submitted to the Centre research management committee will be assessed for their scientific rigour and feasibility and awarded based on merit in these criteria.

Practical skill-building opportunities

Teaching and learning opportunities for both 'hard' (i.e. technical) and 'soft' (i.e. leadership and management) skills will be supplemented throughout the programme by practical skill-building opportunities and technical assistance.

NRLs will be provided with bespoke training on grant writing by senior academics in the Centre and will be supported to each write a minimum of two grants to expand and sustain the Centre's activities by the end of year four.

NRLs will be encouraged to take a leading role in every available opportunity for them to do so, including in the teaching and training of early career researchers, and in the planning, delivery, and evaluation of research undertaken through the work of the Centre. NRL's will be named joint lead for at least one of the primary research projects undertaken through The Centre main projects and will be supported to assume increased leadership and management responsibility within this over time.

Support for conference participation

All ECRs and NRL's will be given support to access opportunities for participation in National and International scientific conferences. Support will be delivered through peer-review of researcher abstracts, papers, panel presentations, and poster submissions; assistance in drafting and peer-review of external conference scholarship applications; and access to competitive funding through The Centre for travel, accommodation and subsistence required to attend a conference.

Building a Community of Practice (CoP) in environmental change and health Centre leadership will endeavour to integrate all ECRs and NRLs into all levels of Centre RCS activities i.e. institutional, network and ecosystem levels (see below), which will provide rich learning opportunities for these staff and students to interact with academic managers and administrators, patients, community members, NGOs and senior policy makers within the wider network of Centre collaborators and partners. The RCS manager will also facilitate shared peer-to-peer learning via a monthly journal club at which both ECRs and NRL's will be encouraged to present at and contribute towards, and the establishment of digital communication channels between all ECRs and NRL's to foster a community of practice within this cadre of emerging public health professionals.

Institutional-level RCS

We will facilitate the strengthening of **institutional capacity** by establishing a Research Operations Community of Practice (ROCoP) with research support staff across the five partner organizations with the intention to share knowledge and provide technical support towards:

- Curating and standardising best practices in research management
- Integrating quality assessment frameworks within core research activities
- Identifying opportunities for professional development specific to women who work in the research environment.

Initial activities of the ROCoP will focus on building a collaborative multi-country team that can exchange knowledge and ideas in relation to different areas of research management and operations. Members of the ROCoP will be supported to develop and implement an institutional process for research support staff within their organisation to create and use personal development plans as a way in which to strengthen staff motivation, career planning, and retention.

Over the course of the grant a series of teaching and training webinars and online exercises targeted at the ROCoP as well as research managers, finance managers, human resource leads and communications personnel within each of the country partner institutions. Training will cover research programme management, financial management, communications and engagement, and human resource management for researchers, as well as how to set, monitor and evaluate institutional progress on diversity and inclusion targets such as the retention and career progression of female staff.

We will develop and implement a research governance tool which will cover research ethics, data protection and information, health and safety, finance management and creating a positive research culture. All efforts will be made for training resources, learning materials, processes and tools to be locally owned and delivered, and processes put in place to train all new staff in relevant programs and practices to continue the learning cycle and knowledge sharing environment well after the end of the initial Centre award.

The ROCoP, in partnership with TGI's Centre for Operational and Research Excellence (CORE,) will also facilitate a series of assisted internal audit activities, whereby country partner operations, finance, and human resource leads will be supported to audit internal policies and identify and address any opportunities for strengthening institutional policy and processes for research governance, quality assurance, diversity and inclusion, and staff retention and promotion. Given the investment in Individual capacity strengthening, particular attention will be given to human resource activities at each country partner institution. These activities include assessing mechanisms for appraisal and performance review and continuing professional development opportunities, with a particular focus on gender equity.

Network-level RCS (Community Engagement and Involvement)

Engagement Academy

We plan to establish an 'Engagement Academy' to be run over a period of 3 years whereby ECRs, NRLs, and other partner institution academic team members will be invited to participate in a series of training modules and practical skill-building exercises in participatory approaches to health research and practice. Asynchronous online training will be delivered by the Imperial College Patient Engagement in Research Centre (PERC) and supplemented with a series of synchronous masterclasses that specifically focus on CEI in research undertaken in the LMIC context. Masterclasses will be facilitated by community members, members of the PAB, and CEI leads from each of the partner institutions. Individuals enrolled in the academy will be expected to be actively engaged in CEI activities as part of their work for the centre, providing ample opportunities to put learning into practice throughout the course of their research. Academy enrollees will be provided with interim opportunities to reflect on their CEI activities with the Centre CEI team and supported to discuss any challenges or roadblocks and develop plans to overcome these. Upon completion of the 3 years of training and engagement, participants will be expected to submit a 2-page reflection on their experience in the academy and a manuscript documenting the co-production of their research for submission to a peer-reviewed journal in order to receive certification of completion of the Engagement Academy.

Capacity strengthening in the community.

We will invest significant resources into capacity strengthening in the community for those affected by or vulnerable to NCDs, civil society and community service organisations (CSOs), local and national media, and municipal, regional, and national (or State, as appropriate) policymakers. We will draw from our extensive CEI plans (see 'Community Engagement and Involvement' strategy, Appendix x) to ensure collaborative working towards common goals between our partner institutions and key country stakeholders. Our extensive pre-award CEI activities across all three countries enabled us to elicit information from a diverse range of stakeholders as to their RCS priorities and develop targeted RCS activities to address these. A final package of RCS activities for CEI will be subject to further consultation and refinement by our Public Advisory Board (PAB), where we envisage three key components: training community health workers; training policymakers, practitioners, and advocacy groups; training community members

Training Community Health Workers

Each country institution will train over 200 Community Health Workers (CHWs; >600 in total) in the deployment of primary health care technology within SMARThealth. In keeping with our adoption of a Comprehensive PHC model, CHWs will also receive extensive training in health promotion in the context of environmental threats, data collection for our multi-sectoral interventions and CEI. We

will jointly train a subset of CHWs to be CEI champions (alongside patients living with NCDs) who will work to ensure the delivery of outreach activities for sustained engagement of especially vulnerable groups in Centre activities. Beyond household based CEI through our PHC model, this will include training to conduct activities within cultural and religious institutions (e.g. religious gatherings in Bangladesh and Indonesia; rural festivals in India), with women's support groups (e.g. Women Farmer Empowerment Scheme in India, Fatayat NU in Indonesia), schools and NGOs (e.g. Child in Need Institute India) to ensure that an open and inclusive dialogue with vulnerable groups is sustained.

Training practitioners, advocacy groups and decision-makers

The Centre will provide a series of joint training events for practitioners, advocacy groups and decision-makers on CEI co-led by community members. These training events will be co-designed by the CEI manager in each country, with support from the Centre CEI lead, the PAB, and community collaborators in each country. Training will cover both the theoretical importance of *why* incorporating lived experience and community-articulated priorities into the evidence to policy process is important, as well as practical guidance as to *how* to actively engage with and involve community members in these processes.

Training members of the community

We will train approximately 450 community members (150 per country) and the NGO representatives that represent them in scientific intervention co-production, data collection, and multisectoral action and advocacy for evidence-informed research and policy. Participant recruitment will ensure representation of key vulnerable groups identified in our pre-award CEI. Materials and resources will be developed and delivered in local languages where necessary in order to ensure all learning opportunities are accessible and applicable to intended beneficiaries, building on the George Institute's extensive experience of teaching and learning adaptation for marginalised communities and the policymakers who support them.

All network-level training materials developed through Centre activities will be widely available for further use and dissemination for individuals, communities and partners within and beyond the consortia.

Ecosystem-level RCS

We will ensure that we target RCS activities towards the overarching research translation and advocacy **ecosystem** by mapping organisations and agencies across the region who are involved in health and environmental research and advocacy and co-developing strategy to collaborate with and encourage them to engage, support, and champion the work of the NCD Centre. Activities will be

lead by TGI's impact and engagement team, and include holding round table events, policy seminars, and international conferences for these regional, multilateral and international organisations to share and discuss the NCD Centre's work and facilitate knowledge sharing and forward planning for strengthening regional capacity to design, implement, evaluate, and communicate research, advocacy, and policy activities at the forefront of addressing the challenge of NCDs as a consequence of environmental change. Key learning from our Research Theme 3 on Empowering People and Communities will be disseminated through these fora to facilitate learning beyond focus countries. Our New Research Leaders and Early career researchers will be engaged in the all of the aforementioned activities at the network and ecosystem levels in order to further build individual and institutional capacity in co-production of research, advocacy, and policy at the nexus of health and the environment.

Equality, Diversity and Inclusion

Principles of equality, diversity, and inclusion (EDI) will be practiced in all aspects of the multi-level Research Capacity Strengthening (RCS) strategic activities. We will endeavour to have gender parity across early career and new research leader positions and in our research operations teams, community collaborator cohorts, and RCS working group. (Appendix x)

RCS Management and Governance

An RCS working group (RCS-WG) will be convened with membership from the RCS Centre co-leads, the Centre RCS manager, and the RCS manager from each partner institution. The terms of reference for this working group is found in Appendix x. The RCS co-leads will represent the RCS-WG at the Centre Steering committee and report RCS progress to the Public Advisory Board (PAB) and External Advisory Board (EAB).

Dissemination and Communication

Communications about the EC-NCD Centre RCS programme and impact will be managed centrally by the Communications Manager and locally by Country leads. All EC-NCD staff and students will have access to support from the Centre Communications Manager in promoting the outputs from their work to wider audiences and maximising impact. All ECR and NRL research progress reports will include a description of dissemination activity and impact so that the Communications Manager can plan a communications calendar accordingly.

Funding will be made available to PhD students and fellows to enable their research to be disseminated appropriately, in line with the NIHR Open Access policy. They will also be eligible to apply for an Impact Accelerator Award that will be available to EC-NCD Centre staff and students on a competitive basis. ECRs and NRLs will be encouraged to produce at least one peer reviewed publication in a good quality journal per year, and these will be captured in annual reports and made available on the EC-NCD Centre website and promoted via social media channels.

All ECRs and NRLs are expected to attend the EC-NCD Centre Annual Scientific Showcase (in-person or online), where they are required to produce a poster of their work that is entered into a competition and presented to their peers, external stakeholders and to senior academic staff affiliated with the EC-NCD Centre via a 5 minute oral presentation. A scientific panel will review all submissions and award the best poster presentation with a certificate of merit. Runner-up certificates will also be awarded.

Monitoring and Evaluation

Overarching our entire RCS strategy is a theory of change and monitoring and evaluation (M&E) framework that will capture key inputs, activities, outputs, barriers, and enablers to achieving impact (see appendix). Each ECR and NRL will complete a baseline capacity assessment, as well as pre-and post-training feedback forms. Further information regarding the monitoring and evaluation of RCS activities is available in the Monitoring and Evaluation strategy.