

BRIEF: PROMOTING SOUTHERN LEADERSHIP WITHIN CLIMATE RESEARCH PROGRAMMES.



IMAGE: Photo by IISD/ENB - Kiara Worth.

KEY MESSAGES

Southern researchers are critical in the design and implementation of climate research to ensure research is locally relevant and to embed a legacy of skills, tools and knowledge that can be used in future programmes. However, Southern researchers and institutions face various challenges when taking on leadership roles within programmes.

Ensuring flexibility within research programmes can support Southern leadership. This occurs by giving Southern researchers opportunities to address emerging needs and take on progressively more responsibility within programmes due to increased confidence.

Building the capacity of Southern researchers is crucial in developing the skill sets and knowledge within institutions. However, it is also important to consider addressing institutional capacity needs.

Research programmes need to recognise and plan for administrative and financial challenges facing Southern researchers, recognising that the institutions in which they are embedded may face constraints.

Given the different types of capacity held within individuals, teams and institutions, it is important to unpack what is meant by capacity at the start of a programme and develop a capacity building plan accordingly to be optimally effective.

WHAT DO WE MEAN BY CAPACITY FOR SOUTHERN LEADERSHIP?

Capacity refers to the ability of individuals or institutions to perform a role or function within a programme.

Capacity on the individual level refers to the foundational and professional competencies and skills of researchers to take on leading roles in research activities.

Capacity on the institutional level refers to the ability of institutions to provide the necessary human resources, financial and administrative systems, and technical systems to take on a management role in programmes.

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INTRODUCTION

This brief reflects on the learning generated through the **Future Climate for Africa (FCFA)** programme, particularly examining how to promote Southern leadership opportunities for researchers from the Global South through programme design. It details some of the key challenges experienced by researchers from the Global South, and outlines how programme design can overcome some of the obstacles.

It draws on reflections from the experiences of researchers affiliated with the FCFA programme. These reflections have been captured through interviews, surveys and webinars led by the Coordination, Capacity Development and Knowledge Exchange (CCKE) unit and have been developed into various knowledge products (see resource list).

ABOUT FCFA

Future Climate For Africa (FCFA) is a £20 million programme funded by the UK Foreign, Commonwealth and Development Office (FCDO) and Natural Environment Research Council (NERC). It is generating fundamentally new climate science focused on Africa and piloting the use of improved medium- to long-term (5 – 40 year) climate change information in development projects. FCFA is made up of five international research teams and a Coordination, Capacity Development and Knowledge Exchange (CCKE) unit.

The five research teams are:

- **AMMA-2050** (African Monsoon Multidisciplinary Analysis 2050)
- **FRACTAL** (Future Resilience for African Cities and Lands)
- **IMPALA** (Improving Model Processes for African Climate)
- **HyCRISTAL** (Integrating Hydro-Climate Science into Policy Decisions for Climate-Resilient Infrastructure and Livelihoods in East Africa)
- **UMFULA** (Uncertainty Reduction in Models for Understanding Development Applications)

An important note: the analysis and views expressed here do not necessarily represent or stand true for all Global South institutions or Southern researchers and are merely based on findings from the research and evaluation of the *Future Climate for Africa* programme.

The south-north divide in research programmes

South-North and South-South partnerships are key to enabling a collective effort to address the global challenges posed by climate change. Supporting emerging Southern leadership within research programmes fosters a legacy of skills, knowledge, and local ownership to sustain impacts beyond programme lifespans. However, various imbalances may exist at the outset of a programme, which inhibits the ability of Southern researchers and institutions to engage in research programmes to the same extent as their Northern counterparts.

While the funding of the FCFA programme did not set financial limits for Southern institutions to bid for projects, the FCFA research teams (with the exception of FRACTAL) were led by Northern institutions. This resulted in an imbalance in roles, with Northern researchers leading on many research tasks. Rigid programme design and expected outputs that had to be specified at the proposal stage - and were then allocated funding accordingly - further complicated the dynamics of South-North research collaboration, leaving Southern researchers limited opportunities to evolve into a leadership position in the research programmes.

Strengthening the capacity of Southern researchers and institutions was an important objective of the FCFA programme. Southern institutions within FCFA were well-positioned to work at the field level, contributing significantly by conducting research, leveraging partnerships and supporting collective action. However, Southern researchers and institutions often lacked technical capacity and had financial and time constraints (committed to other institutional responsibilities, such as lecturing), which inhibited their ability to take on research leadership opportunities within the programme. Although FCFA made dedicated efforts to building the technical expertise in climate science for Southern researchers, Northern researchers maintained the leadership role in the climate science work. The various challenges posed to Southern researchers also skewed authorship of outputs, with Northern researchers leading on the majority of research outputs.

Lessons from the FCFA programme provide important insight into how future programmes can support better inclusion of Southern institutions and their researchers.

WHAT SUPPORTS OR LIMITS SOUTHERN LEADERSHIP CAPACITY WITHIN PROGRAMMES

The capacity gap in familiarity with research project leadership and management between Southern and Northern institutions limits the opportunities for researchers within the Global South to assume leadership positions within research programmes.

Understanding the enablers and barriers which support or hinder the capacity of Southern researchers and institutions to act as leaders is important in designing inclusive and equitable programmes that contribute to a legacy of built capacity. These enablers and barriers are listed in the tables below.

TABLE 1:

The enablers and barriers for southern leadership capacity development at the individual level.

LEVEL OF CAPACITY	FACTOR	ENABLERS FOR SOUTHERN CAPACITY	BARRIERS FOR SOUTHERN CAPACITY
INDIVIDUAL	Organisational capacity (admin and finances)	<ul style="list-style-type: none"> ► Frequent communication and transparency on admin or budget related processes, opportunities and challenges. ► Ring-fencing finance within the budget for context led, Southern research activities. ► Funding could be made available for fellowships which would allow Southern researchers to have more time for leadership responsibilities as a result of being released from other institutional responsibilities (such as lecturing). 	<ul style="list-style-type: none"> ► Financial barriers, administrative burdens and delayed disbursements significantly inhibit the ability of Southern researchers to assume leadership positions, which often results in researchers spending disproportionate amounts of time on such tasks themselves, reducing the time available for research.
	Collaboration and engagement between South-North and South-South researchers	<ul style="list-style-type: none"> ► Building relationships based on trust, which emphasise openness, equity, and learning-by-doing, is important for giving Southern re-searchers space to participate. ► Alterative engagement throughout the lifespan of a programme can support the sustained improvement of capacity over time, while ensuring researchers are working on a shared goal. 	<ul style="list-style-type: none"> ► Uneven power dynamics between both North-South and South-South researchers prevent some Southern researchers from taking on leadership roles within their research projects. ► Insufficient time allocated for engagements inhibits benefits of collective learning such as building trusting relationships. Limited time for engagement can also impact the buy-in of Southern partners, particularly for those who already face competing time demands.

INDIVIDUAL

Programme design

- Flexible programme design can support the identification of locally appropriate activities, thereby enabling Southern researchers to fill emerging context specific research gaps as projects evolve and take on additional responsibility with growing confidence. A collaborative and adaptive re-search process can support the emergence of these opportunities.
- Clear but adaptable project governance structures and inclusive decision making processes that recognise and try to account for the challenges faced by different researchers when engaging in decision processes (e.g. extremely busy schedules, preference for phone calls instead of emails etc.).
- Enables continuous monitoring, evaluation and learning from the programme's capacity development activities, as well as drawing from the capacity development learnings and past experiences of pro-grammes and projects.

- Rigid programme design and implementation inhibit the opportunities for Southern researchers to utilise emerging skills and take up stronger leadership roles.

Technical capacity

- Researchers' capacity needs should be collectively identified and activities should be implemented towards addressing and improving these capacities to open up leadership opportunities

- Capacity deficits, particularly in terms of hard skills (technical and analytical) and soft skills (paper writing, communication, facilitation) inhibit researchers' advancement.
- Limited career progression opportunities for Early Career Researchers (ECRs) in Africa reduces their opportunities to carry out large research roles.

LEFT: Stakeholder engagement at AMMA2050 annual meeting in 2017. Photo by Nkulumo Zinyengere.



TABLE 2:

The enablers and barriers for southern leadership capacity development at the institutional level.

LEVEL OF CAPACITY	FACTOR	ENABLERS FOR SOUTHERN CAPACITY	BARRIERS FOR SOUTHERN CAPACITY
INSTITUTIONAL	Organisational capacity (admin and finances)	<ul style="list-style-type: none"> ▶ Providing sufficient human resources and financing to support Southern institutions to meet financial and administrative requirements to manage programme funding. ▶ Assigning dedicated project managers in a programme can assist Southern researchers to overcome financial and administrative barriers within their institutions. 	<ul style="list-style-type: none"> ▶ Biases towards funding for Northern institutions result in limited financial and leadership opportunities for Southern institutions. ▶ Bureaucratic processes within Southern and Northern institutions can significantly inhibit a flexible approach to implementation of activities.
	Collaboration and engagement between South-North and South-South institutions	<ul style="list-style-type: none"> ▶ Including relevant local institutions in the programme design, with equitable distribution of roles throughout, ensures support for locally driven research and avoids conflict between institutions. 	<ul style="list-style-type: none"> ▶ Uneven power dynamics between both North-South and South-South institutions, often resulting from externally driven research goals, may result in tension and the decreased receptivity of research.
	Technical capacity	<ul style="list-style-type: none"> ▶ Institutional infrastructure constraints should be collectively identified and acknowledged, and programme design should be targeted towards helping to address these constraints. 	<ul style="list-style-type: none"> ▶ Institutional capacity deficits, particularly in terms of infrastructure, data availability and computing capacity, limits the leadership potential of Southern institutions.



LEFT: Researchers participating in group activities during FRAC TAL annual meeting. Photo by CCKE

FIVE RECOMMENDATIONS FOR DESIGNING AND ROLLING OUT PROGRAMMES THAT PROMOTE SOUTHERN LEADERSHIP

1. Strengthen the individual capacities of Southern researchers

Southern researchers have important roles to play in programmes and their roles should extend beyond being entry points for engagements. The inclusion of Southern institutions and researchers can ensure that research is driven by the local context and reaches the right people, while leaving a legacy of knowledge and skills from programme activities.

There is a pressing need to acknowledge and work towards addressing the power imbalances that hinder effective engagement of Southern researchers in research programmes. It is also important to develop the management capacity of Co-Principal Investigators in the South to allow them to take on increasing leadership roles over time; and the technical and research capacity of Southern Early Career Researchers (ECRs) to equip them with the skills and knowledge to advance in their research careers.

“I was also exposed to some of the techniques that we use for model evaluation and I met people who are also in that field, which also impacted on me as to how to go about my research in the climate field.”

- IMPALA ECR

Capacity development can happen by increasing opportunities for Southern researchers within research spaces, and through technical and skills transfer between South-North and South-South partnerships. In some instances, where researchers are unable to take on more leadership responsibilities due to time constraints, funding could be made available for fellowships which would allow Southern researchers to be released from other institutional responsibilities (such as lecturing). Research teams should also facilitate opportunities to pause and reflect on their capacity building plan. As different perspectives and aims emerge from Southern researchers, it is important to unpack how skills and knowledge transfers within teams are supporting the capacity of Southern researchers to take on more roles and responsibilities. Monitoring the progress of capacity building activities within research teams is critical to ensure that otherwise unspoken and undefined capacity goals are being met.

CASE STUDY

Improving scientific capacities of African scientists

A key ambition within FCFA was to support improvements in the knowledge, skills and capacity of African scientists. Technical capacity building initiatives within FCFA were facilitated through centrally coordinated funds (e.g. the Innovation fund and Mobility fund), as well as through research consortia-led training, conferences and workshops. While centrally coordinated funds supported the further inclusion of ECRs in the programme, intensive problem-solving workshops were found to be particularly valuable in developing the hard skills (e.g. data analysis, coding, modeling capabilities) and soft skills (e.g. paper writing) of these researchers. Repeated and staggered workshops helped develop scientific capacity over longer periods, while also supporting the ability of scientists to produce climate science that is relevant to decision-making within Africa. These workshops have helped improve capabilities for African scientists to analyse the climate model CP4-Africa's dataset through HyCRISTAL and develop user-relevant climate metrics through AMMA-2050.

In addition to training African scientists, consortia-hosted platforms for mutual sharing between partners allowed for further knowledge exchange and mentorship between the North and South. The IMPALA project hosted workshops that allowed African and UK partners to share expertise on key climate processes, and UK scientists shared their expertise on model development (which is largely missing in the South). This led to the initiation of the Model Evaluation Hub - LaunchPAD programme, which is further expanding the knowledge of model development of African ECRs and narrowing the gap between model users and developers.



TOP: Participants during closing session of the African Climate Risks Conference. photo by IISD/ENB - Kiara Worth.

2. Consider and address the funding and administrative constraints of Southern institutions

The systems of donor reporting, due diligence and payment schedules present various challenges for Southern institutions. Southern institutions are rarely able to front-load financing for quarterly disbursements in arrears. This can delay getting research off the ground, de-motivating researchers. If possible, front-loading payments to Southern institutions can ease these burdens; however, this depends on the funding arrangement. When funding is disbursed directly from funders, payments are often made on invoice, but when institutions are subcontracted to lead institutions, payments could be front-loaded to address funding gaps for Southern institutions. In addition, providing travel grants (as FCFA provided through the Mobility Fund) can give Southern researchers access to travel opportunities (for fieldwork, training, conferences and meetings) when their home institutions are unable to support these costs.

“Travel grants have enabled me [to] connect with many new and important career networks. I have emerged a leader of a University-City Network that seeks to promote urban resilience in Africa.”

- FRACTAL ECR

Institutional capacity is also a barrier, as varying financial administration between Southern and Northern institutions can delay financial reporting and fund disbursement. Clear communication and project management skills transfer is essential to ensure administrative and reporting measures are aligned for Southern institutions to receive funds on time. Northern institutions can support their Southern counterparts in taking on increasing leadership, by transferring increasing responsibility to them as they become more familiar and confident with funder requirements. Funders should also be aware of administrative issues within Southern institutions and either dedicate funding to institutional development for funds to be channelled through Southern Institutions, or enable Southern researchers to access and control funds through Northern institutions to avoid experiencing challenges with their home universities administration.

3. Include flexibility in programme design

Programmes without flexible funding or roles may limit the ability of Southern researchers to step into leadership positions which emerge during the programme lifetime, particularly if the programme is context-led. As opportunities emerge, and the capacity and confidence of Southern researchers grow over time, programmes should ensure that roles and responsibilities evolve as well.

As the technical skills of Southern researchers improve, the participation of these researchers in research outputs and tasks may increase. However, if leadership has been set from the start of the programme, the opportunities for the Southern researchers to lead or take on more responsibility is often limited. When Southern researchers have not been entrusted with leadership from the start of the programme, setting up ring-fenced funding to address emerging research needs may provide Southern researchers with subsequent opportunities to take on leading roles.



TOP: Participants at the African Climate Risks Conference. Photo by IISD/ENB - Kiara Worth.

“In the beginning, the ECR was unable to articulate the issues well, but [...] he is now able to prepare and present easily. He has also gained strength in writing. [With] regards to quantitative analysis, the candidate is now able to do statistical analyses and fit data to different model distributions and conduct several tests.”

- UMFULA supervisor

CASE STUDY

Ring-fenced funding to supporting emerging needs within FCFA

In response to a need to increase FCFA's network of ECRs, particularly from African institutions, the CCKE issued a range of short-term research grants through an Innovation fund. The Innovation fund was set up to address emerging research gaps within the programmes, with the grants being issued after the main research activities were already underway. These grants supported the additional involvement of African researchers by including additional workstreams and providing funding for post-graduate studies.

The short-term research grants were beneficial in providing Southern researchers with access to global expertise and mentoring/supervision within the FCFA network. This enabled more ambitious research proposals and improved outcomes for the ECRs' career trajectories, which 'stand-alone' bursaries would have struggled to emulate. The Innovation fund also ensured that funds were ring-fenced to address research needs that were not apparent at the outset of the programmes, and provided Southern researchers and institutions the opportunity to take the lead on this research.



TOP: Early Career Researchers discussing their work during a LaunchPad workshop in 2020.
Photo by Beth Mackay

4. Strengthen the institutional capacity

Focusing capacity development on individuals may have a limited institutional legacy. Limited funding for post-doctoral fellowships and post-graduate studies in Southern institutions results in ECRs either moving out of academia or taking on full-time teaching roles. This means there are limited opportunities for ECRs to conduct their own research. These limited opportunities, as well as high staff turnover, pose significant challenges to ensuring sustained benefits for institutions from individual capacity development.

Despite these challenges, ECRs benefit greatly from their involvement in collaborative research programmes. The partnerships and relationships which form in such programmes may create the potential for Southern researchers to access knowledge and technology from Northern institutions. While these partnerships can help researchers to temporarily overcome barriers at their home institutions, it is important to consider ways to build Southern institutional capacity beyond the timeframes of programmes. Ensuring that future programmes build off of existing capacity improvements may lead to improving the institutional capacity of Southern institutions over time.

CASE STUDY

Providing access to world-class technology and skills through North-South partnerships

South-North institutional partnerships were important in transferring knowledge and skills in FCFA. These partnerships also provided FCFA researchers with the ability to overcome constraints they faced within their own institutions. In cases where Southern institutions faced limited access to data and poor computing capacity, partnerships with Northern institutions provided the opportunity for African researchers to access these facilities through their partners.

Access to world-class technology and peer-to-peer learning allowed Southern researchers to take the lead on research which they would otherwise not have had the institutional capacity to do. This prevented Southern institutional capacity from limiting the benefits of individuals. This was evident from the HyCRISTAL project, which enabled researchers from the IGAD Climate Prediction and Applications Centre (ICPAC) to access data and super-computing facilities from the University of Leeds. This allowed the researchers to analyse the CP4-Africa simulation and take on lead authorship of peer-reviewed academic papers on their results.

"My interactions with the [researchers] from the UK has exposed me to new data sets, new tools, new networks. This has enhanced my ability to articulate climate issues.

- HyCRISTAL ECR

CASE STUDY

The value of Southern-led research teams

Within FCFA, the FRACTAL research team was led by the Climate Systems Analysis Group (CSAG) at the University of Cape Town (UCT), South Africa, and was the only Southern-led research team. FRACTAL was able to develop strong partnerships with various institutions across Southern Africa. The coordination team at CSAG worked with partners from several other Southern African institutions to collaboratively diagnose the institutional barriers (of UCT and other institutions) that limited flexible, context-led activities. Through ongoing communication and flexibility, the management teams across these institutions were able to brainstorm mechanisms that supported more effective movement of funds between UCT and partners to allow for in-country engagements as the needs emerged. This generally required a case-by-case diagnosis of challenges and opportunities (e.g. for each engagement) and, in some cases, the problems persisted despite the effort.

The focus on collaborative and transdisciplinary learning with FRACTAL allowed a flexible and iterative process to support capacity development to happen over time. Approaches such as city-to-city learning exchanges enabled Southern institutions to share experiences and good practices, allowing partners to build off each other's knowledge. The strong Southern partnerships in this case ensured that capacity development was a collective effort.

5. Enable collaboration that supports Southern leadership

While South-North partnerships present opportunities for skills and knowledge transfers, these relationships need to be geared towards enabling Southern researchers to take on increasing leadership roles. This may include collaborative assessments of capacities and capabilities, to ensure activities are targeted towards building the capacity of Southern researchers. Mentorship roles in programmes should go beyond knowledge and skill transfers, by supporting emergent leadership to take hold.

“When we [went] to Leeds, we also saw another way of working: We saw where people are working in different labs, the way people collaborate, the way they interact; and that helped me build my capacity and I made more contacts and strengthened my professional networks.”

- AMMA-2050 ECR

In addition to South-North collaboration, South-South collaboration is particularly important. South-South mentorship and networking opportunities are essential for Southern researchers to have a good grasp of challenges and opportunities within the region. Collaboration between Southern researchers enables peer learning and can allow Southern researchers to overcome individual institutional capacity constraints. South-South collaboration is particularly important for forming a unified voice for the Global South. This unified voice is able to leverage relevant support from the North to address local goals, and to connect disparate Northern funded projects and programmes.



TOP: Researchers collaborate during a LaunchPad workshop in 2020. Photo by Beth Mackay.

LEFT: Participants in a workshop during the African Climate Risks Conference. Photo by IISD/ENB - Kiara Worth.



SUMMARY

Future Climate for Africa (FCFA) brought together over 200 researchers from 14 different countries and, in doing so, helped to build the capacity to varying degrees of African researchers involved in the programme. The learning from FCFA provides vital understanding and lessons in building the capacity and promoting Southern leadership within research programmes.

Future international research programmes must actively involve Southern researchers and institutions in programme design and implementation, and provide sufficient leadership opportunities. Supporting Southern leadership within programmes ensures a legacy of ownership of skills and knowledge, which has been developed to support the use and uptake of climate and weather information into decision-making. A legacy of improved capacity ensures Southern researchers are equipped to take on leadership roles, while strengthening the capacity of Southern institutions ensures they are able to lead large research programmes in future

Key Resources:

[A critical reflection on learning from the FCFA programme](#)

[Building research capacity in Early Career Researchers – insights from an international climate research programme](#)

[Webinar Recording: Promoting Leadership Opportunities For Southern Climate Researchers](#)

[Blog: Trust, collaboration and flexibility are key elements in climate research programmes](#)

[Video: Future Climate for Africa's Early Career Researchers discuss their capacity development](#)

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IMAGE: Photo by IISD/ENB - Kiara Worth.

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