

# BRIEF : HOW COLLECTIVE LEARNING CAN PROMOTE THE UPTAKE AND USE OF CLIMATE RESEARCH.



## KEY MESSAGES

Collective learning is the by-product of collaborative and interactive research and practices. Collective learning ensures that all stakeholders learn from each other and work together to navigate solutions.

Good facilitation, particularly of in-person engagements, supports collective learning through building the capacity of stakeholders but also strengthens collaboration among those involved.

Collective learning can be facilitated through deliberative, tailored activities, boundary organizations, and information-sharing and coordination at the programmatic level.

Collective learning can also lead to the discovery of novel approaches to facilitate engagements that effectively promote the uptake and use of medium- to long-term climate information.

Approaches to promote the uptake and use of climate information should focus on the needs of the user, and pay particular attention to the collective learning potential of co-production processes which allow for ongoing dialogue and innovation.

## CONTRIBUTING AUTHORS (listed alphabetically)

Julio Arajuo, SouthSouthNorth  
Roy Bouwer, SouthSouthNorth  
Suzanne Carter, SouthSouthNorth  
Richard Graham, Met Office  
Blane Harvey, McGill University  
Ying-Syuan (Elaine) Huang, McGill University  
John Marsham, University of Leeds  
Estelle Rouhaud, London School of Economics  
Katharine Vincent, Kulima Integrated Development Solutions

## GLOSSARY OF TERMS

### COLLECTIVE LEARNING:

Learning which emerges from activities of knowledge sharing, collaboration and co-production processes. In this case, collective learning shapes how the programme as a whole carried out transdisciplinary and impactful research.

### FACILITATED LEARNING:

Structured learning activities led by an individual or group of individuals with the specific intention to improve understanding around particular issues. This learning can improve the capacity of those involved while developing a collective understanding of climate change issues.

### CO-PRODUCTION:

The process of bringing together different knowledge sources and experiences to jointly develop new and combined knowledge which is better able to support specific decision-making contexts (Kniveton et al., 2016).

### TRANSDISCIPLINARY RESEARCH:

Research that integrates knowledge from different disciplines, expertise, and stakeholders to jointly create new knowledge to address complex problems.

## FUNDED BY



Natural  
Environment  
Research Council

# INTRODUCTION

This brief reflects on the learning generated through the [Future Climate for Africa](#) (FCFA) programme, particularly examining the outcomes of collective learning within a multidisciplinary and multi-consortia programme. This brief details some of the key approaches to collective learning within FCFA, and outlines how these approaches supported the uptake and use of climate information within decision-making spaces.

This brief draws on the report "[A critical reflection on learning from the FCFA programme.](#)" The report (1) examined how learning has guided the governance and research processes and outputs within FCFA, and (2) reflected on FCFA members' experience of the successes, or lack of success, throughout the programme. Subsequent briefs will reflect on southern leadership and programme design.

## 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 consortia and a [Coordination, Capacity Development and Knowledge Exchange](#) (CCKE) unit.

### RESEARCH WAS CARRIED OUT BY THE FOLLOWING CONSORTIA:

- [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)

## THE IMPORTANCE OF LEARNING IN CLIMATE AND DEVELOPMENT RESEARCH

Responding to urgent climate change Issues Requires adaptation strategies which are informed by long-term risks. Despite the threat climate change poses to developing countries, medium- to long-term climate change information is often not used in decision-making spaces (Singh et al., 2018). This may be as a result of information often being produced in isolation and without taking the usability and usefulness for decision-makers into account. The idea of collective learning is therefore becoming increasingly important to ensure that all stakeholders in adaptation spaces are learning from each other and working together to negotiate solutions.

Large-scale programmes which promote collective learning for climate and development are uniquely positioned to bring a diversity of stakeholders to the table (Cundill et al., 2019). The learning that occurs between stakeholders involved in these programmes is particularly important in building relationships and trust. This can promote better uptake and use of climate information which involves co-production processes to develop tailored, relevant and usable information and solutions. Understanding the learning dynamics in complex adaptation and development contexts is critical for future policy and programme planning.



PICTURE: Learning exercise at HyCRISTAL annual meeting, Kenya, 2016. - Photo by Julio Araujo

# COLLECTIVE LEARNING WITHIN FCFA AND WHY IT WAS IMPORTANT

## LEARNING ACROSS THE FCFA PROGRAMME

In FCFA, learning between research consortia and across the programme as a whole was a core component of the programme. A strong network of researchers supported by a range of activities and mechanisms to promote learning were vital to the outcomes of the programme. The activities found to support collective learning were; webinars, producing joint knowledge products, the FCFA Mid-Term Conference, thematic working groups, and joint project funds. The CCKE unit played a central role in facilitating the majority of these activities and mechanisms. For example, the Mid-Term Conference organised by the CCKE was particularly important for cross-programme learning and resulted in the identification of programme-wide synthesis products and initiatives for joint funding (e.g. applied research and innovation funds).

Good facilitation during learning activities was crucial for the design and implementation of collective learning across the programme. Good facilitation ensures learning happens on a level playing field by encouraging the participation of all involved, making sure all voices get equal attention. Facilitated collective learning strengthened the FCFA network of researchers as it helped to build relationships and a shared understanding between different researchers from different consortia. This also supported the implementation of research activities, production of high-quality outputs, dissemination of findings and arguably the overall management and administration of consortia activities.

## CASE STUDY

### FCFA MID-TERM CONFERENCE

[The FCFA Mid-Term Conference](#) was the first programme-wide event that brought together researchers from across FCFA's five research consortia. The event reflected on the research from the first two years and was vital in co-developing a roadmap for the second half of the programme, through identifying programme-wide synthesis products and additional research needs.

The conference was strategically organised at a time when projects had progressed enough to share emerging research across the programme, but also at a time when integrating additional research tasks was still possible. The event played an important role in building relationships and trust between FCFA researchers and created a space for cross-programme discussions (e.g. through defining programme synthesis areas). This created new and reinforced existing collaborations across consortia, but also built consensus on the programme's legacy.

## COLLECTIVE LEARNING WITHIN CONSORTIA

Similar to learning at the programme level, collective learning within the five research consortia was important in FCFA. This learning happened through in-person activities such as workshops, training events, stakeholder dialogues<sup>1</sup>, knowledge exchange and learning alliances<sup>2</sup>, annual meetings<sup>3</sup>, and webinars. However, regular virtual meetings were also beneficial for learning, especially for well-defined tasks and processes. These meetings sustained learning for those who had already met in person, but also included those who had not physically met. Virtual meetings were also able to overcome financial and other practical barriers (such as travel bans in 2020).

Good facilitation also proved vital in promoting effective learning at the consortium level. Facilitated activities built trust and established goals, while creating relationships between a diversity of stakeholders. This helped develop a broad understanding of the context of research questions, thereby shaping the direction of research. In this sense, collective learning in consortia allowed members to not only gain new knowledge but also to build common understanding, trust and relationships. This was extremely beneficial for shaping the direction of research, outputs and outcomes of the FCFA programme.

## CASE STUDY

### LEARNING WITHIN CITIES IN SOUTHERN AFRICA

[FRACTAL](#) aimed to understand how cities in Southern Africa were responding to climate risks and supported the integration of medium- to long-term climate information into cities' decision-making processes. FRACTAL designed a city learning process which promoted learning among stakeholders and allowed learning to influence knowledge production within the consortium.

Learning activities such as [learning labs](#), field trips, role playing and games, among others, supported [inclusive, participatory and reflexive learning](#) and were particularly important for collective learning. This learning process was not only core to transdisciplinary knowledge co-production, but also built relationships and trust among stakeholders. This allowed FRACTAL to build the [receptivity of stakeholders](#) to increase their participation in co-production as well as their uptake of climate information within decision-making spaces.

1. Stakeholder Dialogue refers to engagements with key stakeholders to co-explore relevant issues to gain a better understanding of the needs of stakeholders.

2. Knowledge exchange and learning alliances refer to opportunities and partnerships where researchers working on similar issues in different regions (or sectors) could learn from each other and collaborate in producing new research.

3. Annual meetings were opportunities for consortia to take stock of their progress and plan for the year ahead and were typically attended by all the core researchers and stakeholders within each consortium.

## CASE STUDY

### COLLECTIVE LEARNING TO IMPROVE PAN- AFRICAN CLIMATE MODELLING

One of the aims of [IMPALA](#) was to bring together UK and African climate scientists to further understand how climate modelling over the continent could be improved. The model development and analysis expertise from UK scientists was paired with the knowledge of regional and local processes from senior climate scientists based across Africa. This collaboration was important for collective learning and outcomes of the project.

Through sustained remote interaction together with intensive three-day, in-person workshops, researchers were able to share results, gain a mutual understanding of how climate models performed over Africa, co-explore the issue and co-develop an academic paper. The workshops were specifically designed to allow for intensive discussion in small groups, followed by a larger group discussion with climate scientists working on modelling over Africa. This enabled effective collective learning between UK and African scientists while also strengthening the network of researchers in IMPALA. This has resultantly translated into various advances in climate modelling over Africa, not only creating new academic outputs but developing the capacity of climate scientists.



PICTURE: FCFA Researchers at Africa's first Wikipedia edit-a-thon on climate change, South Africa, 2019. - Photo by Mhoneleli Mlobeli

## APPROACHES TO PROMOTING THE UPTAKE OF CLIMATE INFORMATION

In FCFA, mechanisms which supported collective learning both across the programme and within consortia were vital for how the programme produced and disseminated climate research. The approaches used to improve the uptake of climate information varied across the FCFA programme. In some cases, climate information was made more accessible and usable (e.g. through developing new products and tools such as [new climate modeling and projections](#), [policy briefs](#), [infographics](#), [hazard mapping](#), among others). While in other cases researchers worked closely with stakeholders to co-produce climate information and build their capacity in understanding and using this information (e.g. through participatory approaches such as [theatre forum](#), [embedded researchers](#), [collaborative discussion forums](#), and [climate risk screening tools](#)).

A common trend in how the programme tried to improve the uptake and use of climate information centred around effective stakeholder engagement. Despite the various approaches employed across FCFA, the approaches used were often well aligned to building blocks of co-production outlined by the [FCFA/ WISER Co-production manual](#) (Identify key actors and build partnerships, build common ground, co-explore need, co-develop solutions, co-deliver solutions, evaluate) (Carter et al. 2019). One of the key factors which supported the uptake of climate information was in-person engagement which was initiated in the early stages of research and sustained throughout the programme.

## CASE STUDY

### BUILDING THE CAPACITY OF DECISION-MAKERS TO USE CLIMATE INFORMATION IN WEST AFRICA

[AMMA-2050](#) aimed to inform decision-makers in West Africa to promote climate-proof development in the region. AMMA-2050's process involved the combination of advances in climate science with processes to co-produce tools to support decision-making and simultaneously build the capacities of decision-makers and researchers. The project utilised collective learning as a means to improve the use of climate information by listening to different perspectives of climate risks, encouraging the participation of a range of stakeholders and co-developing pathways to climate-proof development.

Approaches such as [Participatory Impact Pathways Analysis](#) helped develop a shared understanding and vision, which contributed to a mapping of the stakeholders who could support effective delivery and also explored possible solutions and their impact. AMMA-2050's approach was able to harness the benefits of collective learning to improve the capacity of both producers and users of climate information.

## MAXIMISING THE UPTAKE AND USE OF CLIMATE INFORMATION THROUGH LEARNING

Lessons from collective learning at the programme and consortia level demonstrate the importance of including collective learning mechanisms in the design of large multidisciplinary research projects. At both scales of learning, **expert in-person facilitation is vital** for promoting learning within the programme. Collective learning activities are also beneficial as they can contribute towards building stakeholder relationships. **Strengthening engagements with stakeholders and building relationships** is essential in fostering transdisciplinarity in research programmes, but also forms a basis for collaboration, trust building and capacity development. In-person engagements are vital for building trust among stakeholders, and allow teams to come to a common understanding and develop common goals. **Working closely with a diversity of stakeholders**, collective learning can promote social cohesion and support processes of co-production. These **approaches which promote the co-production of knowledge** lead to joint ownership of needs-driven information and are well positioned to support the uptake and use of climate information in decision-making spaces.

### CASE STUDY

#### APPLYING LESSONS LEARNT TO PROMOTE THE USE OF CLIMATE CHANGE INFORMATION

During FCFA's extension phase, [HyCRISTAL](#) extended their activities to include climate change information sharing in the [Greater Horn of Africa Climate Outlook Forum \(GHACOF\)](#)<sup>4</sup>. Tapping into GHACOF's experience with seasonal predictions, HyCRISTAL aimed to initiate dialogues about including long-term climate change information into decision-making. Introducing information users to a range of tools and findings from HyCRISTAL allowed the project to apply lessons and outcomes of collective learning within FCFA to promote the use of climate change information at the regional scale.

Utilising products such as climate risk narratives for rural and urban East Africa, HyCRISTAL's engagements at GHACOF helped information users understand the future risks and initiated discussions around the most urgent of these actions. Linking the discussion of future risks to recent high-impact weather was found to be particularly effective when engaging users at GHACOF.

4. This included joint HyCRISTAL and WISER support to ICPAC Project (WISER-W2SIP) [activity at GHACOF54](#).

### CASE STUDY

#### COLLABORATIVE DISCUSSION FORA AS PART OF CO-PRODUCING A WATER MODEL IN MALAWI

To support development and planning around water-use allocations within the [Shire River Basin](#) in Malawi, [UMFULA](#) co-produced an open source Water Evaluation and Planning (WEAP) model with the government and other stakeholders in the agriculture, energy and environment sectors.

Collaborative discussions were critical within the collective learning process to share progress and make refinements so that the WEAP model could address stakeholder needs and enable discussions around uncertainty within the model and the climate projections used. The learning process was not only important for building relationships, but also to build credibility in the outputs. This then allowed for researchers and stakeholders to work together in identifying possible adaptation options for robust decision-making.



PICTURE: Stakeholder engagement at AMMA2050 annual general meeting, Senegal, 2017. - Photo by Nkulumo Zinyengere.

## SUMMARY AND RECOMMENDATIONS

- Collective learning is key for transdisciplinary research programmes. The role of collective learning in strengthening relationships, building trust and fostering social cohesion is vital for building a common ground in programmes that include researchers and stakeholders from various disciplines, sectors, and backgrounds. Collective learning needs to be incorporated into programme design to promote best practice strategies for international and multidisciplinary teams.
- In-person facilitation plays a significant role in learning and fostering collaboration, trust building, and increasing stakeholder capacities. Expert facilitation plays a large role in both cross- and intra-consortia learning. This role should be considered during the design of programmes to ensure researchers or practitioners who have the skill set for facilitation are included. Should this skill set be absent from a programme, this may present an opportunity to develop the skill sets and build the capacity of local partners to carry out effective facilitation.
- While collective learning may be carried out through deliberate practice, programme design and funding should also be flexible to support emerging collective learning processes. This could include allocating funds and human resources to support ad-hoc learning activities and events.
- Collective learning also contributes to the ability of a programme to improve the use of climate information in decision-making spaces. Engagement with stakeholders is important to produce research which is tailored to local climate information needs. Including stakeholders in collective learning processes is critical to build a common understanding between researchers, practitioners and decision-makers.
- Close linkages can be drawn between approaches to improve the use of climate information and the building blocks of co-producing climate services. Programmes should utilise both of these to guide collective learning processes as well as decide how programmes should attempt to influence the use of climate information in decision-making.
- Ongoing recording is needed to understand the impact of collective learning in a learning-centered climate and development programming. Collective learning outcomes should therefore be included in Monitoring, Evaluation and Learning strategies for programmes, with dedicated human resources allocated to this.

### REFERENCES:

- Kniveton, D., Visman, E., Daron, J., Mead, N., Venton, R. and Leathes, B. (2016). A practical guide on how weather and climate information can support livelihood and local government decision-making: An example from the Adaptation Consortium in Kenya. Working draft, Exeter: Met Office.
- Singh, C. et al. (2018). The utility of weather and climate information for adaptation decision-making: Current uses and future prospects in Africa and India. *Clim. Dev.*, 10, pp. 389–405. <https://doi.org/10.1080/17565529.2017.1318744>.
- Cundill, G., Harvey, B., Tebboth, M., Cochrane, L., Currie Alder, B., Vincent, K. ... and New, M. (2019b). Largescale transdisciplinary collaboration for adaptation research: Challenges and insights. *Global Challenges*, 3(4), 1700132.
- Carter, S., Steynor, A., Vincent, K., Visman, E. and Waagsaether, K. (2019). Co-production of African weather and climate services. Manual, Cape Town: Future Climate for Africa and Weather and Climate Information Services for Africa.

### FULL REPORT:

Araujo, J., Harvey, B., Huang, Y.E., McClure, A., Owiti, Z., Rouhaud, E., Roux, J., Vincent, K. Visman, E. (2020). [A critical reflection on learning from the FCFA programme. Future Climate for Africa.](#)

### SUGGESTED CITATION:

Araujo, J., Bouwer, R., Carter, S., Graham, R., Harvey, B., Huang, Y., Marsham, J., Rouhard, E., Vincent, K. (2020). How collective learning can promote the uptake and use of climate research. Brief, Cape Town: Future Climate for Africa.

This document is an output from a project funded by the UK Foreign, Commonwealth and Development Office (FCDO) and the Natural Environment Research Council (NERC) for the benefit of developing countries and the advance of scientific research. However, the views expressed and information contained herein are not necessarily those of, or endorsed by FCDO or NERC, which can accept no responsibility for such views or information or for any reliance placed on them. This publication has been prepared for general guidance on matters of interest only, and does not constitute professional advice. You should not act upon the information contained in this publication without obtaining specific professional advice. No representation or warranty (express or implied) is given as to the accuracy or completeness of the information contained in this publication, and, to the extent permitted by law, the Future Climate for Africa's members, FCDO, NERC, their advisors and the authors and distributors of this publication do not accept or assume any liability, responsibility or duty of care for any consequences of you or anyone else acting, or refraining to act, in reliance on the information contained in this publication or for any decision based on it.