

Strengthening scientific capacity for African climate science through the LaunchPAD project

March 2021

Project:
Model Evaluation Hub

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IMPACT

LaunchPAD has made great progress in developing scientific understanding of how models represent African climate systems, and in generating model evaluation tools.

It has built a pan-African team. The five teams from African universities are at the core of the project. This allows for learning between different career stages within each institution, and across institutions, and regions. This has enhanced understanding of pan-African climate processes.

Scientific capacity development has been maximised for the 10 fellows, who each have their own research project, and are supported not only by the experienced scientist in their own institution, but also through collaboration with team members from other institutions, including more senior researchers and peers.

LaunchPAD has brought together scientific and technical development. It required both new scientific research and new software tools. This also allowed for enhanced capacity development where the fellows were able to develop technical skills in the process of their core research.



THE CHANGE STORY

LaunchPAD is the first phase of the Climate Model Evaluation Hub for Africa. The aim of LaunchPAD is to develop climate model evaluation tools focusing on processes which matter in African regions, which can be automated to run across models. These tools will substantially improve understanding of how climate models represent Africa.

This understanding is fundamental to support further improvement of models over Africa, and to inform the use of climate model data in adaptation planning. The project therefore addresses vital scientific and technical developments which are needed in order to improve the credibility of future climate information.

To achieve the goals of LaunchPAD, it was important to bring together expertise in African climate systems, knowledge of climate models and climate model evaluation, and experience in software development. This was achieved by building a team of climate model evaluation experts from the UK (including University of Oxford (UOx) and the UK Met Office (UKMO)) and scientists from Central, West, East, and southern Africa, as well as hiring a dedicated scientific programmer. 10 early career “fellows” were recruited in African regions, to work with an experienced scientist in their own institution.

The LaunchPAD project has strengthened scientific capacity for African climate science research through:

1. Building a team of scientists from multiple regions and career stages,
2. Working on both scientific and technical development,
3. Adapting approaches to foster remote collaboration during the Covid-19 pandemic

FURTHER RESOURCES

[LaunchPAD:ClimateModelEvaluation Hub for Africa enters its first phase](#)

[Climate researchers from Africa and the UK discuss African climate model evaluation at LaunchPAD workshop](#)

FCFA area of change 1:

Enhancing scientific knowledge and prediction of African climate and new understanding of the resulting impact on the robustness of future climate change scenarios.

FCFA area of change 2:

Strengthening scientists' capacities to develop decision-relevant climate information.

LEARNING

Including African Early Career Researchers (ECRs) in the core of the research team, for as long as possible, has great potential to enhance scientific capacity development. LaunchPAD had funding that was able to support fellows over more than a year (and in some cases the collaboration was continuing from IMPALA). Each ECR was encouraged to pick their own research topic, which allowed for more autonomy, development of skills in research design, and it also meant that for some fellows it was possible to integrate the work with their research degree.

Building capacity of groups has potential for greater benefit than focusing on individuals. The LaunchPAD project included teams from each African institution, including experienced researchers and fellows. This approach had many benefits. The experienced researchers benefit because they play an important leadership role in the project, build their research groups, and they also don't have to commit to deliverables they might not have time to work on. The more junior researchers conduct the bulk of the research, and they get more support to develop their skills and careers. This may lead to stronger groups in each institution, with stronger connections internationally and with other African regions.

Postdoctoral researchers can play an important role in scientific capacity development for more junior scientists. There has been great potential for postdocs/more senior ECRs to support junior scientists, in part because they have more time available, and in part because it can be easier to build an informal relationship.

Embedding software development within a science project has potential to improve technical skills. When technical capacity development is discussed, there is often an emphasis on training workshops. LaunchPAD found more progress through technical training that is embedded within the project deliverables and science projects.

Investing time and funding into remote collaboration and working environments is good value for money. LaunchPAD's progress in connecting online has demonstrated the value of investing time to persevere with remote collaborations. The funding invested in supporting internet connections was also extremely good value for money (and a relatively small investment).

Future Climate for Africa's Areas of Change are:

1. Enhancing scientific knowledge and prediction of African climate and new understanding of the resulting impact on the robustness of future climate change scenarios.
2. Strengthening scientists' capacities to develop decision-relevant climate information.
3. Increasing the capacities of users/decision making bodies/institutions to appropriately integrate climate information within medium-term decision-making.
4. Approaches that support co-production of decision-relevant climate information and enable channels for on-going dialogue between the providers and users of climate information.
5. Identifying social, political, behavioural and economic barriers to the use of climate information in long-term decision-making, working to elicit solutions which support effective integration of climate risks within decision making across scales, sectors and social groups.
6. Approaches to climate science research and climate-sensitive risks within medium-term decision making which enable active participation and address the specific concerns of women and marginalised groups.

Funded by:



**Natural
Environment
Research Council**

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