The Southern African Development Community (SADC) is a complex region. The largest country in SADC, the Democratic Republic of Congo (DRC), is 70% of the land size of India, and the smallest, Seychelles, is a small island developing state with one public university that is less than two decades old. Fostering higher education collaboration across 15 diverse countries requires a patient and pragmatic approach. Even the community’s own flagship education collaboration agreement, the “SADC Protocol on Education and Training”, took Ministers of Education three years to ratify.

Against a backdrop of three distinct colonial legacies and the economic dominance of South Africa in the region, SADC universities are increasingly under pressure to become more internationalised, in order to remain competitive, but from a very low funding base. The QS World University Rankings for 2016-17\(^1\) showed only seven southern African universities out of more than 109 public universities in the top 700 ranked universities in the World – all of them from South Africa. No university from the remaining 14 SADC countries has begun to register a notable rise in the rankings in more than a decade.

Southern Africa is also one of the most vulnerable regions globally to the impacts of climate change. Current climate variability and vulnerability to extreme events such as floods and droughts is high, and a range of existing stressors, including water availability, land degradation, desertification and loss of biodiversity constrain food security and development. Reduction of the region’s structural poverty is further challenged by health threats such as malaria and HIV/AIDS, as well as institutional and governance aspects. Climate change will compound many of these interlinked problems for regional livelihoods, which are often based on subsistence agriculture, and for regional economies, which are often dependent on natural resources.

The southern African region faces considerable impacts from the projected physical climatic changes and the all-encompassing nature of these impacts highlights the fact that climate change is not a narrow environmental problem, but a fundamental development challenge that requires new and broad-based responses, emphasising

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\(^1\) Quacquarelli Symonds World University Rankings ™ https://www.topuniversities.com/qs-world-university-rankings
the need for additional research across the range of disciplines, and for an interdisciplinary approach to knowledge production within and amongst universities and research institutes in the region.

Notwithstanding these severe projected impacts, there are significant opportunities for moving towards more resilient livelihoods and economies in the region. For example, through social, behavioural and technical changes to safeguard the important agricultural sector through scaling up agroforestry and conservation agriculture and developing more heat- and drought-tolerant crop and livestock varieties, or to harness potential developmental benefits though retro-fitting old and designing new infrastructure to be resilient to projected climate impacts. Harnessing these opportunities will require targeted research, knowledge dissemination and technology innovation; this is where the higher education sector can play a valuable role, for example through the SARUA Programme for Climate Change Capacity Development (PCCCD).

With the adoption of the Global Goals for Sustainable Development in 2015, the PCCCD programme has become even more relevant, as Goal 4 (Quality Education) and Goal 13 (Climate Action) need well-capacitated universities to achieve the targets set. Article 11 of the Paris Agreement reaffirms that capacity building and climate education are essential elements of climate response actions. As a result, there has been a shift towards an interest in long term capacity building actions. The Paris Committee for Capacity Building (PCCB) constituted at COP22 is a clear indication of the strong intent towards capacity building for climate action.

Low income countries such as those of SADC are particularly in need of capacity development in order to not only improve the quality of higher education (Goal 4), but also to ensure regional capacity for climate action is strengthened (Goal 13). Through the mapping of capacity needs and stakeholder priorities and the development of a regional framework for knowledge co-production, capacity development has been placed first and foremost among the priorities to address through the PCCCD, with the SARUA Curriculum Innovation Network (SCIN) as the prime vehicle for achieve it. From four recommended regional networks, it was decided that a curriculum innovation network could contribute to both lecturer capacity development as well as preparing post-graduates with the necessary tools to become PhD researchers and policy makers. The SCIN was set up as a collaborative project to develop an open access Master’s curriculum in climate change and sustainable development, available to all universities in the SADC region. This included capacity building support provided to academic teams from a pilot group of 22 universities, in order to impart curriculum principles, and ensure easy delivery of the Master’s at Universities.

A Master’s level curriculum was regarded as a key ‘curriculum innovation point.’ SADC countries have a shortage of locally-educated PhD graduates who can produce new knowledge for climate action, and also do not always have sufficiently qualified policy makers who can address the complex issues of climate change and sustainable development. By developing a southern African curriculum through a process of South-South collaboration and by hosting curriculum capacity development workshops with university lecturers, SCIN addresses the three interlinked
issues of knowledge, capacity and collaboration, and thereby makes a contribution towards sustained transformation and revitalisation of higher education in SADC.

The SCIN contribution might seem small in a region of 277 million people, especially since the problems facing higher education in southern Africa are systemic and wicked. One of the key learnings emerging from the PCCCD and SCIN establishment is, however, that what at face value seem like isolated interventions across the region, should be regarded as incremental contributions – each a step forward – to higher education transformation. The important enabler for the impact of each initiative to build upon what has already been achieved is to ensure visibility between and across programmes on the African continent.

The lessons from the SCIN curriculum development process and the work preceding it can be distilled into four broad categories: (a) South-South collaboration (b) programme design and governance, (c) stakeholder participation and engagement and (d) practical lessons in coordinating regional initiatives.

South-South collaboration

Successful South-South collaboration can often take time to develop. The successful regional projects in SADC have been the ones built on strong, multi-year partnerships. Two examples of programmes which preceded the PCCCD and then serendipitously became strong enabling networks to the PCCCD and SCIN, were (a) the SADC Regional Environmental Education Programme (REEP), which progressed through multiple phases with Swedish International Development Cooperation Agency (Sida) support and (b) the United Nations Environmental Programme (UNEP) supported Mainstreaming Environment and Sustainability in African Universities (MESA) programme. By the time these programmes were reaching the end of their lifecycles, partnerships were established with the PCCCD whereby SADC REEP provided co-funding while MESA provided expertise for regional engagement. These relationships continued and a number of individuals from the two programmes became an integral part of the curriculum development process.

This experience emphasises that in the SADC region, different programmes with similar objectives should harness each other’s strengths and build on the capacity already developed. For example, the SCIN curriculum development work was able to leverage SADC-REEP and MESA funding and expertise to coordinate intervention activities locally and to co-facilitate capacity development training. These two programmes had an existing network of environmental education practitioners who although not being climate change disciplinary experts maintain a presence within universities in the SADC region. Similarly SCIN and its network of participants should be able to contribute to new programmes by way of expertise and mentorship. The SCIN team has also continuously engaged with other programmes in the region to build close relationships and collaboration opportunities. While examples

South-South collaboration examples: SADC programmes as SCIN networking partners

The SADC Regional Environmental Education Programme (SADC REEP) facilitated climate change education in a number of universities and colleges through the Mainstreaming Environment and Sustainability in African Universities (MESA) programme between 2009 and 2013. The programme co-facilitated the writing of a book on Climate Change Education in schools in SADC (Published by UNISA, 2013) and in 2013–2014 facilitated a Climate Change adaptation and mitigation training course in SADC Trans-Frontier Conservation Areas through a project funded by GIZ (2013 – 2014). While SADC REEP is not active anymore, the SCIN establishment process engaged with many alumni from the programme and they still play an important role as national contact points.

The Southern African Science Service Centre for Climate Change and Adaptive Land Management (SASSCAL) is a joint initiative of Angola, Botswana, Namibia, South Africa, Zambia and Germany, responding to the challenges of global change. This initiative is aimed at complementing the excellent existing research and capacity development infrastructures and research initiatives in the region. Its mission is to conduct problem-oriented research in the area of adaptation to climate change and sustainable land management and provide evidence-based advice for all decision-makers and stakeholders to improve the livelihoods of people in the region and to contribute to the creation of an African knowledge-based society.

WaterNet is a regional network of university departments and research and training institutes specialising in water. The network aims to build regional institutional and human capacity in Integrated Water Resources Management (IWRM) through training, education, research and outreach by harnessing the complementary strengths of member institutions in the region and elsewhere. WaterNet member institutions have expertise in various aspects of water resources management and are based in Southern and East Africa.
of collaboration exist, networking among differently funded programmes is still not sufficient in the SADC region and need to be addressed on a SADC or funder level.

**Programme design and governance**

Fostering long-term collaboration becomes an issue of planning. Funders, beneficiaries and delivery partners have a responsibility of planning long term for the sustainability of programmes and networks, irrespective of their involvement past the contracted term. This will enable inter-project ‘hand-overs’ that will allow committed individuals who are active in the region to successfully transition from one project to another and make a significant impact over time as a composite result of accumulated knowledge by being involved in more than one project. Two key lessons are:

- A programme should not proceed if a suitable and committed funding partner is not fully on board – many programmes in the region start off well through volunteer action, but to maintain momentum needs secure funding to make use of the best available regional expertise, and especially if face-to-face engagement is part of the programme design.
- Even if a programme with multiple phases is not funded in full, a clear roadmap should be attached to funding cycles, so that funding can always cover a complete set of deliverables, or a completed phase. This ensures that follow-up funding is easier to secure and contributes to the sustainability of programmes. A programme partially funded and left incomplete halfway through does more damage than good to the image of southern African programmes, as well as to regional goodwill and experts’ willingness to participate in future.

**Stakeholder participation and engagement**

In the context of revitalising higher education in SADC through a coordinated response to climate change, important lessons were learned on how to catalyse change and how to build capacity to sustain change. The fact that the mapping study, followed by the knowledge co-production framework and the curriculum innovation process had no precedent or model to replicate seemed at first a challenge, but with the benefit of hindsight this allowed for the flexibility to respond to the evidence that was emerging as the PCCCD unfolded. An open participation process in the mapping study, where stakeholders from all sectors could participate, followed by a synthesis of bottom-up issues to develop the framework, and then another open process to appoint a curriculum development team, supported by a voluntary regional reference group, established a responsive model of openness and ownership which continuously aligned and adjusted to regional needs. This experience provides the following insights:

1. **Build a sound evidence base for change**

   To catalyse change, it is necessary to base the assessment on what action must be taken, on a broad as possible evidence base, which is confirmed with those stakeholders who contributed to it. This is similar to the inter- and transdisciplinary teaching and learning approach advocated by the SCIN Master’s curriculum;

2. **Prioritise and implement what can become a next building block**

   The full set of necessary actions agreed upon should remain as comprehensive as possible, as a record and a plan of what needs to be done. It is, however, very rare that one programme can address all required actions, especially if the scope is on a regional level. The Regional Knowledge Co-Production Framework recommended four networks over time and it took two years of dedicated effort to establish only one of the networks (SCIN) with sufficient collateral and momentum to become sustainable. On a programme or project level, the identified outputs and outcomes must be achievable, in order to build a foundation for further action, either as a next funded phase, or as part of a different engagement by a different team. The SCIN Master’s curriculum is a tangible output. By
ensuring a robust development process that delivered the curriculum as a self-contained whole, it offers multiple options for further use and future development.

3. **Remain flexible to what comes next**

At different points in the PCCCD implementation between 2012 and 2017, different projects came to an end, each with a tangible set of deliverables for use, or further development. At each end-of-project, a decision had to be made whether project partners wished to continue with a next phase. This required decisions on funding, team capacity and additional resources and expertise required. What was key to each of the decision points was a reflection on what has been achieved, and what would be the best way forward be in terms of defining a project with a next set of deliverables. Given the nature of the PCCCD, this meant anything from establishing one of the other networks, to developing additional Master’s modules and courseware, to building an online learning platform to developing capacity within universities who wish to use the curriculum. This flexible approach, to assess achievements and feedback from the network, reflect on the overall vision and define a next project based on the most potential impact based on what has been achieved, was key to ensuring a cohesive whole was delivered in the end.

4. **Put effort into mapping and involving stakeholders**

The extended engagement with the higher education sector during the course of the PCCCD has confirmed that significant expertise is available in the region, but coordination requires time and effort. In SADC there are no ready-made platforms available where multiple networks converge and there is still fragmentation of systems between countries and programmes. The willingness to share and participate is however strong, hence the effort required is as much to continuously map and identify experts, but also to get them involved in a meaningful way. In the example of SCIN, this was done through a Peer Review Group (PRG), who could voluntarily receive and contribute to curriculum documents as they were being developed. The active PRG participants could then become further involved in coordinating responses to the call for university teams to express interest in attending curriculum capacity development workshops. What was originally compiled as a list of expert resources in the mapping study, became an expanded list of verified active regional contributors. This does not only contribute to catalyse change, but also to build capacity to sustain change.

5. **Address structural barriers to change**

The SADC community has unique political, cultural and historic legacies which have an impact on regional programmes. Collaborative projects which introduce concepts of innovation in particular need to be sensitive to these, adapt to intractable conflicts and engage purposefully where it can introduce change. A first level of awareness is required around political history. In the case of SADC, it has its origins as an economic block to counter the regional dominance of apartheid South Africa. Now, with South Africa its biggest member state and also with the most developed higher education sector, a programme such as the PCCCD had to ensure as much regional participation in working groups and technical delivery teams as possible from the start, often by insisting on a regional composition for working groups and delivery teams.

When it comes to the higher education sector and knowledge area specialists, it was found that the involvement of the same individuals and experts perpetuated a situation where a small number of disciplinary ‘gurus’ maintain their expert profile without sufficient early career practitioners progressing to a similar level of recognition. In southern Africa this also has a strong gender dimension and by preventing younger academics to become recognised in their fields and making contributions, universities either lose them to other sectors, or the situation prevents the emergence of change and innovation from within universities. In the case of SCIN participation, whether for governance groups, curriculum development teams or targeted capacity development events, the issue was addressed by defining and communicating explicit criteria for gender consideration across all elements of the
programme. Another way of addressing representation was through the use of a voluntary participation mechanism, which allowed individuals who might otherwise not have been nominated to participate, to become directly involved in the programme. In the example of SCIN, a participation category was created for “Individual Contributors,” to allow anyone to participate, with or without approval of their managers. The Peer Review Group mechanism was also voluntary to allow anyone with an interest to participate in the Master’s curriculum development process.

Language remains a primary barrier to participation in collaborative regional programmes in SADC. It also presents a barrier to change, given often poor professional linkages between universities in the region. The three main languages of tertiary instruction are English, French and Portuguese. The colonial legacies of these also determine quality assurance frameworks and accreditation systems, which in themselves hamper the achievement of the SADC Protocol aims for harmonisation and alignment. While English is the dominant language, it is not the common regional language and reduces in particular participation from Angola, Mozambique, DRC and Madagascar and to a lesser degree Seychelles and Mauritius. Regional developmental projects need to take this into account upfront and plan how to address the issue in communications and work sessions. It also requires a clear budgetary commitment to address comprehensively and professionally. In the case of the SCIN curriculum, which was translated into French and Portuguese, the process was mostly managed in English, with key documents translated into French and Portuguese. Still, participation rates remained lower in lusophone and francophone countries, who often had stronger links with their historic colonial powers or other colonial era peers.

**Coordination of innovation and capacity development engagements**

In regional development programmes, and in a programme such as the PCCCD which is aimed at higher education revitalisation, it is often necessary to bring about a willingness to change by ensuring stakeholders who do not normally have an opportunity to engage, can share their experiences. Engagements in SADC in particular have shown that the opportunity to share across national boundaries often strengthen an understanding of the common challenges experienced in other countries, or in the case of the PCCCD, their universities. The awareness of a broader community is very important when it comes to catalysing and sustaining change.

A number of practical lessons emerged about organising, managing and implementing regional curriculum innovation capacity development interventions. Although specific to the SCIN and to curriculum innovation, there are also general lessons which show the importance of planning, awareness of context and project management in regional engagements. The SCIN capacity development activities carried out between September and November 2016 included over 80 participants and 17 curriculum innovation, disciplinary, and engagement experts from nine SADC countries.

When planning and implementing capacity development engagements the SCIN experience illustrated the following:

- By developing and applying engagement principles upfront, regional stakeholder engagement can be very productive and with the right mix of facilitation approaches can improve participation and uptake in regional programmes. The SCIN capacity development principles were (a) participation, (b) emphasising the ‘golden thread’ of curriculum innovation and quality, (c) promoting multidisciplinary teamwork and (d) contributing to regional sharing and collaboration.
- It is important to frame the principle of regional sharing and collaboration appropriately when dealing with stakeholders from different countries or institutions. Convening a multi-stakeholder group does not mean the discussion will immediately turn to collaboration opportunities – these often need to be introduced and facilitated. Once they have been introduced and a broader picture is understood, opportunities to build new relationships and networks become very valuable. To ensure maximum value from face-to-face sessions, they should be planned and presented in a way that introduces the benefits of collaboration.
The management of innovation is often the more difficult part for many organisations or networks. Coming up with innovative ideas is often easier than knowing how to implement these. From an innovation in teaching and learning perspective, the following lessons emerged which could be relevant for other types of networks and engagements:

1. Knowledge of what you are doing improves your chances to change it

What emerged from capacity development engagements implemented as part of SCIN is that, while academics know their subject matter and many practice good teaching approaches intuitively, they are not always familiar with the key pedagogical principles and terms for their teaching approaches and it is necessary to establish a shared base of concepts and facilitating a shared understanding of what it means to innovate when it comes to university curricula. This underscores the need for a shared understanding of what activities a group engages in, what these mean and what it would mean to change them. On a sectoral level, if innovation is to be introduced in higher education systems in countries, or in harmonised systems across the region, it will first be necessary to ensure all those involved with finding new and innovative approaches understand what it is they are trying to change.

2. Working on innovation as a shared output requires agreement on the end-goal

In multi-stakeholder groups spanning countries, sectors or organisations that are tasked with developing a changed and innovative approach or product that can be applied across all their contexts, it is not only necessary to understand the mechanics of what needs to change, but to reach a fundamental level of agreement on what the changes will entail and what the end-result will look like. In the case of SCIN, when the output was a shared regional curriculum, the structure and content of the curriculum had to be made clear and agreed to at an early stage among the development team in order for them to work independently towards the same goal. The experience was that this initial agreement and subsequent reviews to discuss progress and make adjustments to the approach, if needed, is often best done through face-to-face meetings, whereafter technical drafting and delivery of outputs can be done virtually.

3. Introducing innovation is a structured process with clearly assigned roles

The concepts of innovation and change can be misinterpreted to mean ‘anything goes’ or a free-for-all approach to bring about something new. A lasting lesson of the PCCCD over years of engaging higher education stakeholder on how to transform higher education is the necessity of not only formulating a shared understanding of what is to be changed, as well as the future picture, but also to clearly define and assign roles and responsibilities in support of the common transformation goal. The Climate Change Counts mapping study defined ‘collaboration’ as “a process in which entities share information, resources and responsibilities to jointly plan, implement, and evaluate a programme of activities to achieve a common goal,” and a ‘collaborative network’ as “possessing some form of organisation in terms of structure of membership, activities, definition of roles of the participants, and following a set of governance principles and rules.”

These two definitions emphasise organisation and role clarity among those participating. While collaboration is for example the guiding principle of the Master’s curriculum developed as part of SCIN, it still required clear roles and responsibilities assigned on different levels – from workshop coordination and logistics to module development to stakeholder engagement. The nature of the network means it has multiple levels of engagement between and among individuals and groups and these are encouraged, but with specific individuals or teams assigned clear network roles, as per the network management model adapted.

In Summary

The Southern African Development Community (SADC) is a complex region. Since 2012 it has been the pilot ground for a model of collaboration which tested the ability of a higher education sector in need of urgent revitalisation to address the shared threat and knowledge gap presented by climate change. Through the PCCCD and the
development of a SCIN Master’s curriculum in climate change and sustainable development, the project partners have learned that to catalyse change requires a shared agreement and understanding of the change that is needed, but also a clear plan and roles on how to go about bringing change. With funding support and by being able to utilise existing networks and expertise in the region, a process has unfolded over four years which remained open and flexible, but focused on how SADC universities can better respond to climate change. This approach has developed a model of collaboration which is sensitive to national differences, high on engagement and which leaves a clear set of deliverables from which to build a next phase of change and higher education innovation. With the commitment of SARUA to further grow SCIN and develop other PCCCD networks using the same approach, and with a hosted platform in place and mentors available to those who wish to adapt the curriculum in their universities, the sustainability of the network has been incorporated into its design.