climate change counts

An initiative of SARUA

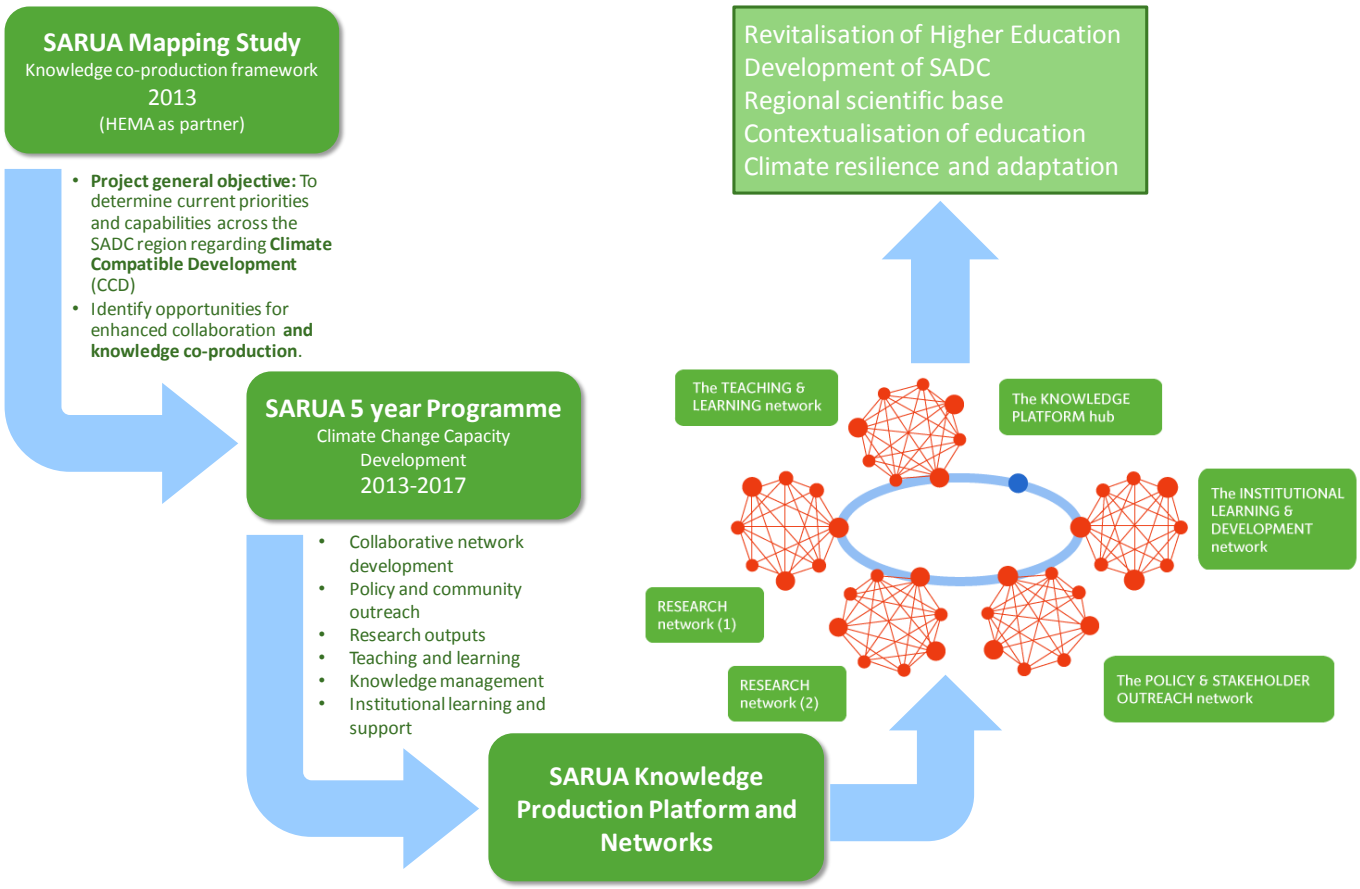
Managed by HEMA

Strengthening University Contributions to Climate Compatible Development in Southern Africa

The initiative

The Southern African Regional Universities Association (SARUA) has established a five year programme for **Climate Change Capacity Development**, which is endorsed by a majority of Vice Chancellors within SARUA's 60 public university members, and is gaining support from ministries of education and the environment. The programme aims to build capacity for **climate compatible development, which** is emerging as a platform for significant collaboration across the academic sector.

The vision and outcomes of the five-year Climate Change Capacity Development programme of SARUA are:



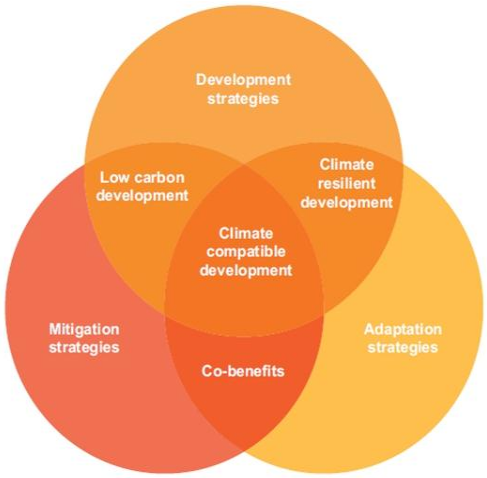
The programme is starting with an **extensive mapping study** of current priorities and capabilities of countries in the region, supported by funding from the UK and Dutch-funded Climate and Development Knowledge Network (CDKN). The Higher Education Management Africa consortium (HEMA) is coordinating the study on behalf of SARUA.

With the support of

CDKN Sida SARUA WESSA

Climate compatible development

Climate compatible development (CCD) is low carbon, climate resilient development. The concept has been developed in recognition of the urgent need for adaptation, given current climate variability and the severity of projected climate impacts that will affect the region; and the need to reduce emissions as rapidly as possible to avoid more catastrophic climate change in the future. Thus while CCD can be framed in different ways, given nationally and locally specific development trajectories, it does require that current and future climate risks are mainstreamed into development, and that both adaptation and mitigation are integral goals of development, as indicated by Figure 1[1]. In the southern African context, poverty reduction would be a desired co-benefit. Uncertainties in major drivers of change, including climate, socio-economic and political risks, necessitate that CCD be viewed as an iterative process, in which vulnerability identification and risk reduction responses are revised on the basis of continuing learning. Climate compatible development opens up new opportunities for interdisciplinary and transdisciplinary research, teaching and engagement with communities, policy makers and practitioners.



The issues

Globally, Southern Africa is one of the most vulnerable regions to the impacts of climate change. Current climate variability and vulnerability to extreme events such as floods and droughts is high, and water availability, land degradation and desertification, and loss of biodiversity constrain food security and development. Poverty reduction is further challenged by health threats such as malaria and HIV. 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. Southern Africa's vulnerability to climate change is high due to the large number of people who make their living off the land, as well as to underlying causes such as structural poverty, combined with high climate risks. Already, the observed temperature changes for southern Africa are higher than the increases reported for other parts of the world (IPCC, 2007), and projections indicate a 3.4°C increase in annual temperature (up to 3.7°C in spring), when comparing the period 1980-1999 with the period 2080-2099[2]. Warming over the region is likely to be twice the global average. Further projections are for overall drying for southern Africa, with increased rainfall variability; a delay in onset of the rainy season with an early cessation in many parts; and an increase in rainfall intensity in some parts. Key risks relate to increased average temperature; heightened intensity and/or frequency of extreme events such as floods and droughts; more severe heat and water stress; rising sea levels; and landslides and soil erosion.

In addition to introducing new sources of risk, climate change acts as a risk multiplier – for example, by exacerbating existing food insecurity, or placing additional stress upon already degraded ecosystems. The impacts of climate change at the local level cannot be separated from other development pressures faced by people: climate impacts will compound existing stresses, and responses will be initiated to the mix of changes facing people. Thus climate change must be viewed within the multiple stresses that impact upon poverty in the region – it is not only an environmental problem, but is a fundamental development problem that requires new and broad-based responses. Shifting perspective from 'development' to 'climate compatible development' requires significant scientific and social innovation. New forms of learning, leadership, planning, policy making and knowledge production are needed. New collaboration platforms will be needed within and between countries.

Universities, climate compatible development and multiple disciplines

Universities have a key role to play in supporting societal innovation and change for CCD. Not only do they develop the knowledge and competence of future leaders in government, business and civil society, but they also provide immediate societal responses given their pivotal role as centres of research, teaching, knowledge sharing and social empowerment. Given the risk multiplier effect of climate change, coupled with the multiple stressor context, it is clear that the impacts of climate change will be far-ranging, acting upon diverse sectors such as transportation, agriculture, health, industry, and tourism. This necessitates a wide-ranging and cross-sector response, in which non-climate-related knowledge fields will be

[1] Source: adapted from Zadek, 2009, and informal communication with staff from the UK Department for International Development

[2] Based on analysis of 21 model simulations by the Climate Systems Analysis Group at the University of Cape Town. Analysis was conducted for the land area falling between 12-35°S and 10-52°E, and for the emissions scenario named "A1B" – see http://media.csag.uct.ac.za/faq/qa_3impacts.html. This area encompasses South Africa, Lesotho, Swaziland, Namibia, Botswana, Zimbabwe, Mozambique, Madagascar, Zambia, most of Malawi and the southern half of Angola.

called upon: for example, psychology and sociology can play a role in researching effective ways to promote the required social and behavioural change.Recognising climate change as a pervasive development challenge creates opportunities for academics, researchers and students from a **wide range of disciplines** in the sciences and humanities to shape pathways of climate compatible development, including through transdisciplinary research

The mapping process and workshops

There is no single framing of climate compatible development. Approaches and understandings vary between countries, universities and disciplines. The scope and strength of existing expertise, networks and capacity for climate compatible development research and knowledge production in SADC is largely unknown. Despite the emerging knowledge infrastructure for CCD, opportunities for collaboration involving higher education institutions across countries are yet to be fully explored.

To address these constraints, the mapping study will:

- Explore diverse understandings of climate compatible development on a country-by-country basis
- Scope climate compatible development knowledge and capacity needs on a country-by-country basis
- Identify and map research, teaching and outreach capabilities for CCD that exist in southern African countries
- Produce an up-to-date picture of the extent of knowledge co-production and transdisciplinary research practices across the SARUA network and identify opportunities for future collaboration

While the mapping process will use a country-by-country approach, a regional perspective will be generated through analysis across countries that will provide a platform for regional collaboration and knowledge co-production.

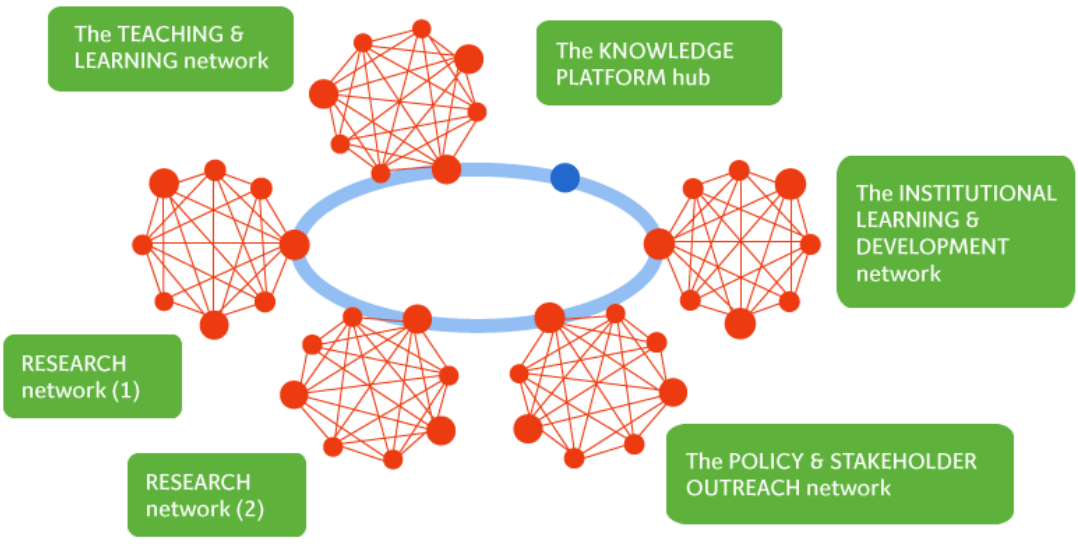
The mapping process will be scientifically informed, participatory and multi-disciplinary. Through the workshop process new collaborative possibilities will emerge, and a stronger engagement and participation in the SARUA 5 year programme on Capacity Development for Climate Change will be established.

The result

One of the key outcomes of the mapping study will be a collaborative research framework to enhance co-production of knowledge. It will include strategies to strengthen networks for climate compatible development research, teaching and community outreach involving knowledge co-production processes between participating universities and policy and community stakeholders. This framework will form the basis for a SADC level research programme and for various country-based partnership agreements. It will provide a 'knowledge platform' for regional and country-based fundraising for research and knowledge co-production. As such the framework seeks to benefit universities themselves, while also strengthening regional interaction and co-operation.

Diagram showing a possible knowledge platform hub

The network comprises a coordinating hub (shown in blue), potential growth hubs (shown in red) and 5-6 other nodes (shown in green). Along with the policy and community outreach, institutional learning and development, research and teaching networks (also shown), the coordinating hubs meet through a coordinating committee (blue oval).



How might we think about transdisciplinary research and knowledge co-production?

An example

CASE STUDY: A research-led programme of knowledge co-production

Title of research Programme: Vulnerability, coping and adaptation within the context of climate change and HIV/AIDS in South Africa: Investigating strategies to strengthen livelihoods and food security and build resilience (Shackleton, S. et. al. 2010)

This research programme, set in two sites in the rural Eastern Cape, South Africa, involved the following studies undertaken by a multi-institutional research partnership (Rhodes University and University of Alberta in Canada). Each study was co-supervised by researchers from each institution and with different disciplinary backgrounds.

Study 1 – Assessing household assets to understand vulnerability to HIV/AIDS and climate change (RU) – Environmental Science and Development Economics Researchers

Study 2 – Effects of social grants on labour supply and food security (UA) – Development Economics and Environmental Science Researchers

Study 3 – Responses to the linked stressors of climate change and HIV/AIDS amongst vulnerable rural households (RU) – Environmental Science and Economics Researchers

Study 4 – Social learning (RU) – Environmental Education, Politics and Environmental Science Researchers

Study 5 – Relative contribution of wild foods to individual and household food security in the context of increasing vulnerability due to HIV/AIDS and climate variability (RU) – Environmental Science and Agroforestry Researchers

Study 6 – Local perceptions of climate change (RU) – Environmental Science Researchers

Study 7 – A community case study of local institutional structures, culture and food security (UA) – Sociology Researchers

Study 8 – An empirical investigation into the relationship between household headship and income i(UA) – Development Economic Researchers

Study 9 - Household adaptive behaviour and climate change: A contingent behaviour approach (UA) - Economic Researchers

Study 10 – Gender and climate change adaptation (UA) - Economic Researchers

Study 11 - Deagrarianisation and forest succession in abandoned fields in a biodiversity hotspot (RU) – Environmental Science Researchers

Study 12 – Baseline and repeat survey of knowledge, attitudes and practices – All Researchers

The research team held monthly meetings as well as regular **meta analysis workshops** to examine how the knowledge that was being produced in the different studies was related, and what it means in relation to broader policy and scientific knowledge of climate change and HIV/AIDS vulnerability. Through this they have produced **meta analysis papers** that synthesise the individual research project findings.

The study also worked with the following boundary partners / stakeholders who have an interest in the studies for policy making and practice, where the meaning of the research findings has been deliberated and discussed, particularly for practical and policy related implications:

- Eastern Cape Socio Economic Consultative Council (ECSECC): Provincial policy making responsibility
- Chris Hani District Municipality: Planning and service delivery responsibility at district level
- Gatyana traditional leadership structures: Traditional authority at a local level
- Eastern Cape Environmental Network: Network of 250 sustainable development NGOs in the province
- Environmental Monitoring Group: National NGO working at provincial level on climate change issues
- Isibindi: Local NGO working on community based care for orphans and vulnerable children
- Promotion of Rural Livelihoods Programme (RuLiv): Rural development NGO linked with the Premier's office
- Agricultural extension officers, social development workers

Additionally, a social learning group was established involving community members nominated by the communities involved in the two study sites. Various activities were undertaken with this group to a) understand the meaning of vulnerability from their experience, b) understand their capabilities and c) to strengthen their capabilities and social network interactions to problem solve and further expand their resilience capabilities and agency development. This included practical problem solving actions, and training for community problem solving. This provided a practical mechanism for integrating research knowledge into community action at a local level.

A specific rural livelihoods focus for CCD research has been defined

The research programme involves multi-institutional research partners

The research involves studies and scholars from different disciplines: natural and social sciences

The researchers engage in inter-disciplinary synthesis work

The researchers engage actively with development partners: policy makers, service delivery agents and practitioners working at community level

Community members are actively engaged as knowledge producers, translators and mediators. Attention is given to capacity building and agency development

THE RESULT: knowledge co-production and use (transdisciplinary synthesis of knowledge-in-practice) in local contexts with broader insights into how climate compatible development may emerge and be actualised practice