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SASSCAL TO CELEBRATE 10 YEARS OF EXCELLENCE IN CLIMATE CHANGE RESEARCH



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“
In order to ensure the current balance between economic gains and survival of biological diversity, we must take actions that restore our environment and reduce global carbon emissions. We are in the era of catastrophic climate change and our own survival is at a risk”

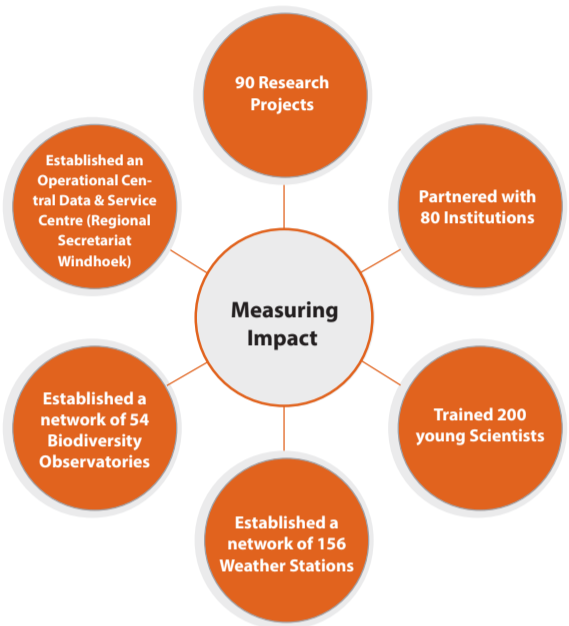
As the Southern African Science Service Centre for Climate Change and Adaptive Land Management (SASSCAL) will be celebrating its 10th anniversary this year on 12th April. We reflect on its journey of excellence to date, which is a story worthy pondering on proving beyond doubt that every positive step taken towards climate change management and Land Management will indeed bring positive change to the global challenges to sustainable development.

SASSCAL, is a joint initiative of Angola, Botswana, Namibia, South Africa, Zambia and Germany. The organisation was established in response to the challenges of global change to conduct research in adaptation to climate change, sustainable land management; provide products, services and information for decision-making; and contribute to the creation of a knowledge-based society through academic and non-academic capacity development programmes.

Its establishment followed a proposal of the Bali Action Plan of the United National Framework on Climate Change at COP 13, which saw the need to have a regional focus when addressing climate change. In addition, the African Union’s 8th Session endorsed the development of fully operational regional climate centers in Africa.

On 18th of April 2012, Ministers representing the six SASSCAL Member States signed the Joint Declaration, which among other provisions affirmed political and financial commitment to share responsibility to promote, establish and sustain the SASSCAL joint initiative. In December 2020, SASSCAL achieved the International Organisation status following the signing of the Treaty by the majority of member States as well as the Joint Declaration between SASSCAL member states and the Funder.

OUR ACHIEVEMENTS



SASSCAL SERVICES & PRODUCTS

SASSCAL ensures that the research deliverables resulting from its Research Portfolio are made available openly and freely. In this regard, the following online and freely accessible data and information portals have been made available:

SASSCAL DATA AND INFORMATION PORTAL

All research publications and deliverables from all SASSCAL-funded research are and will be accessible via the SASSCAL Data and Information Portal. This is an open online data and information portal that can be accessed freely using any web browser. SASSCAL in collaboration with some African and international partners from research, public and private sectors host, safeguard and make available data and information resources openly, while ensuring the integrity and ownership of the contributing parties. <http://data.sasscal.org/>

SASSCAL WEATHER NET

The Weather Net portal provides easy and open access to reliable climate information for over 160 Automatic Weather Stations (AWS) for southern Africa on rainfall, air and soil temperature, humidity, wind speed and direction, barometric pressure, solar radiation, leaf wetness and other sensor data. This in-



Weather Net stations map, data flow process, and online platform

formation aids in the development of efficient management strategies for sustainable water and land resource management, as well as devising strategies for climate change preparedness. SASSCAL Weather Net can be accessed at: www.sasscalweather.net.org

REGIONAL CAPACITY DEVELOPMENT PROGRAMMES

SASSCAL facilitates capacity development at the level of people, infrastructure, and institutions and this is done through:

- SASSCAL Graduate Studies Programmes (SGSP)
- Bursaries and scholarship scheme for postgraduate studies
- Short courses
- Investments in research and technical infrastructure
- SASSCAL Alumni Network Building.

Between 2013 and 2019, SASSCAL 1.0 research project supported 294 students consisting of 3 diploma, 70 BSc, 33 BSc (hons), 143 MSc and 45 PhD from the five SASSCAL member countries. By March 2019, two hundred and eighteen students completed their studies and these included 3 Diploma, 64 BSc, 33 BSc (hons), 93 MSc, and 25 PhD.

SASSCAL Graduate Studies Programmes (SGSP)

SASSCAL and German’s Federal Ministry of Education and Research has established the SASSCAL Graduate Studies Programme in Integrated Water Resource Management (SGSP – IWRM) which is implemented at the Namibia University of Science and Technology (NUST) in Windhoek over three academic years from 2022 - 2024.

The programme aims to (1) establish an innovative and excellent regional collaborative doctoral programme in IWRM, (2) develop tailor-made short courses for decision-makers and industry, (3) develop a new curriculum for a new regional PhD qualification in IWRM and (4) develop a blueprint document for the transformation of the SGSP-IWRM into a SASSCAL Centre / Institute of Excellence in IWRM. The first cohort will be in 2022 which will include 15 students comprising three candidates per SASSCAL member country enrolled in the research-based PhD programme.

SASSCAL’S RESEARCH PROGRAMMES [FROM SASSCAL 1.0 TO SASSCAL 2.0]

In December 2021 SASSCAL and its main funder, German- Federal Ministry of Education and Research (BMBF), signed a Grant Agreement for the implementation of SASSCAL 2.0 Research Programme in SADC.

The grant, valued at Euro 8.678.198,14 (eight million six hundred and seventy-eight thousand one hundred

ninety-eight euros), will be executed in the five member countries namely Angola, Botswana, Namibia, South Africa, and Zambia.

After winding up the SASSCAL 1.0 Research Programme, which covered the period 2012 – 2018, the international organisation has been positioning itself to commence a new phase of its research activities under the SASSCAL 2.0.

A key aspect of SASSCAL 2.0 is the prioritisation of regionality and interdisciplinarity of the projects. The organisation’s five key priority areas namely; Agriculture, Biodiversity, Climate, Forest and Water Resources Management, remain the focus of the second phase, with development of relevant and innovative products and services being the required outcome.

PROJECTS OF STRATEGIC IMPORTANCE

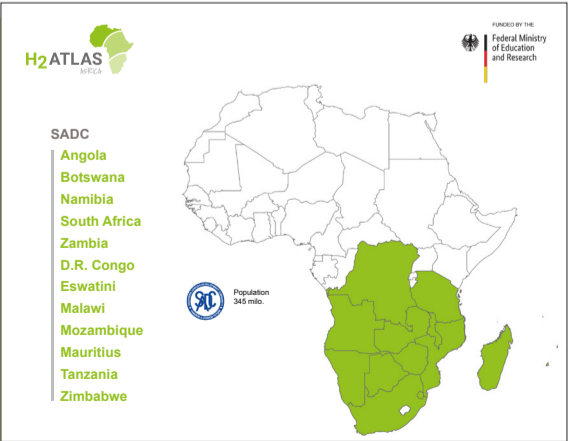
H2ATLAS-AFRICA

H2ATLAS-AFRICA project is the first-phase of a joint initiative of the German Federal Ministry of Education and Research (BMBF) and African partners in the Sub-Saharan region (SADC and ECOWAS countries) to explore the potentials of green hydrogen production from the enormous renewable energy sources within the sub-regions. The project is part of the BMBF’s Go Green Go Africa initiative in line with the Federal Government’s National Hydrogen Strategy.

The H2Atlas-Africa project was officially launched on 10 June 2020 at Forschungszentrum Jülich GmbH. Forschungszentrum Jülich GmbH is the lead technical partner and is supported by SASSCAL as the coordinating partner in Southern Africa. SASSCAL has collaborated with the Southern African Development Community (SADC) Centre for Renewable Energy and Energy Efficiency (SACREEE) as key player to implementation of the project.

The aim of the H2Atlas-Africa project is to support sustainable and economic development in Africa through a viable hydrogen economy. The project will explore the potential of Green Hydrogen production from the vast renewable energy sources within the African continent (<https://www.h2atlas.de/en/>). Transitioning from fossil fuels to renewable energy represents a co-benefit in terms of reduction of greenhouse gases and reducing pollution from fossil fuels. The project has a high potential of making Africa an exporter of Green Hydrogen, hence gaining more relevance in the international energy market and reducing dependence on fossil fuels. This project is best suited for the SADC region which is generously endowed with renewable energy resources such as solar, wind, and hydro.

Experts and country involvement



H2ATLAS-AFRICA Study Areas in SADC

A total of twelve (12) SADC countries: Angola, Botswana, Namibia, South Africa, Zambia, Mauritius, Malawi, Tanzania, Zimbabwe, DR Congo, Eswatini and Mozambique are participating in the project and positively contributing to the production of an interactive atlas, showing identified Green Hydrogen hotspots.

Some tangible output that have been achieved in SADC countries between 03 August 2020 and 31 December 2021 as the data requirements for the Green Hydrogen Atlas, include the following data:

- Land Eligibility Constraints for Variable Energies (Wind & Solar).
- Data Requirement for H2Atlas – Comprising; Water, Livestock, Infrastructure, Agriculture, Energy Demand, Security.
- Fuel Cost Estimation, Hydro Power Plants, Socio-economic Data, Water Extraction Costs.
- National mobilization workshops.
- National regulations related to power generation, distribution and transmission, renewable energy technology including green hydrogen, land and water use. Regulations on CO2 (-equivalent) emissions.
- Investment incentives that support renewable energy deployment in general and green hydrogen.

Considering the multi-disciplinary nature of the project, several experts were engaged in data collection in each SADC country, and these included; energy experts, water experts, economists, social scientists, engineers, policy and regulation experts, climate experts, land experts, transport and infrastructure experts, geospatial experts, and finance experts, to mention only a few.

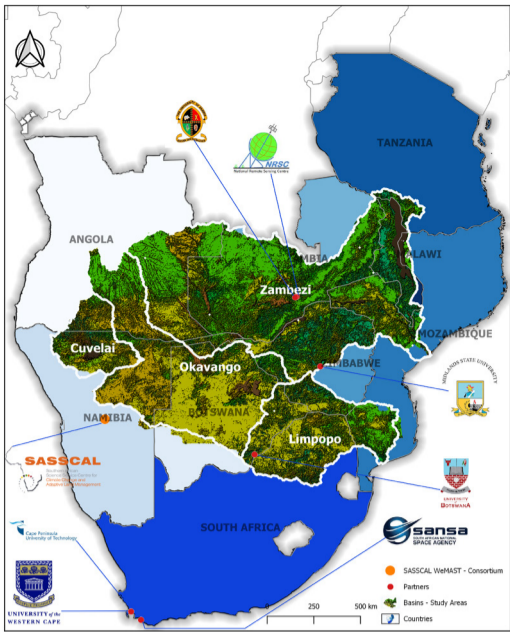
Apart from collaborating with several ministries of energy and environment in many SADC countries, SASSCAL collaborated with the several lead institutions that were tasked to be responsible for the project implementation in SADC. Some notable partnership in SADC comprised the following institutions;

- i. SASSCAL (Zambia, Botswana, Angola & Namibia)
- ii. Council for Scientific and Industrial Research (South Africa and DRC)
- iii. Eswatini Energy Regulatory Authority (Eswatini/ Swaziland)
- iv. Ministry of Energy and Public Utilities and the University of Mauritius (Mauritius)
- v. Universidade Eduardo Mondlane (Mozambique)
- vi. Tanzania Renewable Energy Association (Tanzania)
- vii. SUSTENERGY (Zimbabwe).

WeMAST PROJECT

The WeMAST (Wetland Assessment and Monitoring Platform for Transboundary River Basins in Southern Africa) project is a project funded under the Global Monitoring for Environment and Security (GMES) & Africa Support Programme between the Africa Union and the European Union, in the area of space science & technology and a key priority under the EU-Africa partnership.

The overarching objective of the WeMAST project is to design and develop an integrated platform for the assessment and monitoring of wetlands to support sustainable water and natural resources management of selected transboundary river basins, namely, the Cuvelai, Okavango River, the Limpopo River and the Zambezi River Basins.



WeMAST Partners & Study areas

Wetlands are highly productive and biologically diverse ecosystems that contribute significantly to livelihoods and economic development. In addition to the bionetwork services they provide to society, wetlands play an important ecosystem and environmental role. They serve as habitats for wildlife and bird species, provide flood reduction, drought relief and coastline protection. Wetlands are the most effective carbon sinks on earth and therefore a critical solution to the challenges faced by global warming.

WeMAST already designed and developed an integrated platform for wetland assessment and monitoring that supports sustainable management of selected transboundary river basins. The platform will integrate existing data products and tools to implement sustainable wetland management systems by drawing on the experience from the SASSCAL-led consortium, partners and other key stakeholders across local, national, and regional institutions.

Human and institutional capacity development through WeMAST under the project theme ‘with the Users for the Users’ is also being implemented to ensure the users have capacity and capability to access, process and utilise the products developed.

From 2011 to date SASSCAL and its consortiums have resoundingly concluded the first phase of the Wetlands Monitoring and Assessment Projects.

Navigating into the future of WeMAST [Phase 2]

WeMAST Phase II intends to ensure the automation and widespread uptake of the already developed Geoportal services to target groups and end users, including river basin commissions and national water/ environmental institutions.

The consortium’s Earth Observations (EO) based services will be in sync with other related EO based projects and programmes in a way that enhances their incorporation to the decision-making processes in the SADC region and African continent at large.

It is interesting to note that on the 14th of March 2022, the Global Monitoring for Environment and Security & Africa (GMES and Africa) and SASSCAL signed another Grant for WeMAST Phase 2 to kick start operations and implementation to be due at the end of December Year 2025.

