DRAFT: Meeting Notes

Southern African Physics Network Consultative Forum HYBRID MEETING 05 JULY 2024

1 Attendance

The attendance register is attached

2 Background

The South African Institute of Physics convened the first consultative forum on the co-creation of the Southern African Physics Network as a hybrid meeting.

The meeting sought to discuss and shape ideas for the creation of the Southern African Physics network, which will foster collaboration between physics stakeholders in Southern Africa to foster partnerships and collaboration so that physics can effectively contribute to scientific and socioeconomic development in the region.

Prof Rudolph Erasmus (President SAIP) and Prof Igle Gledhill (on behalf of IUPAP, President at Large for Membership) facilitated the forum discussion.

3 Welcome

Prof Rudolph Erasmus welcomed delegates present. He highlighted the following.

- The SAIP initiated the idea of SADC member countries forming the SAPhysNet learning from activities happening in other regions.
- SAIP appointed Prof Azwinndini Muronga as SAIP - SAPhysNet Working Group Chair on behalf of the SAIP International Liaison Committee and tasked him to initiate the process of the dialogue on forming the SAPhysNet
- He stressed that this initial meeting has been initiated and organised via the SAIP, but the SAIP is an equal partner in discussion. Going forward, and depending on the outcome of the meeting, other partners in the meeting may volunteer to arrange/host future meetings on a rotating basis.

3.1 Forum Code of Conduct

Prof Erasmus reminded the members present that, in accordance with the International Union of Pure and Applied Physics (IUPAP) general code of conduct governing conferences and meetings, the SAPhysNet forum meeting was intended to provide a forum to exchange ideas and suggestions on an equal basis. Hence, the conduct of all delegates must ensure that other participants will enjoy an environment that encourages the free expression and exchange of scientific ideas and is free from all forms of discrimination, harassment, and retaliation.

3.2 SAPhysNet Background

Prof Azwinndini Muronga provided background on the idea of establishing the SAPhysNet and its benefits. He highlighted the following

1. The challenges faced by countries in Southern Africa require a well-coordinated, integrated approach, and physics is the key to addressing these challenges.
    - Physics in Southern African countries face multiple and often unique challenges
    - Physics will need the other science disciplines and the social sciences to address these challenges.
    - Physics will require civil societies, policymakers, the private sector, and institutions of higher learning.
    - Physics should embrace interdisciplinary and trans-disciplinary approaches.
2. A strong regional network will contribute positively, with one voice, to shaping physics on the continent and facilitating collaboration, solving common challenges, exploiting common opportunities, and allowing physicists to easily move across the borders of the Southern Africa countries.
    - The network should be co-created by the physicists in Southern Africa for physicists in Southern Africa through robust yet focused discussions.
    - The name “Southern Africa Physics Network,” abbreviated SAPhysNet, was coined as a working phrase, and members are encouraged to make suggestions for a suitable name.
    - Ethical conduct, democratic ideals, transparency, diversity, equity and inclusion should be part of the guiding principles.
    - Include research and training, physics education, innovation, and public/govt/industry engagement among the focus areas.
    - Driven by the need for strong physics for the sustainable future of the Southern Africa region.

4 Department of Science & Innovation and SA-National Research Foundation

Miss Lindiwe Gama gave inputs on behalf of the Department of Science and Innovation (DSI). She discussed the DSI's efforts to strengthen collaboration with African countries and highlighted the department's Africa engagement strategy, which is guided by key policies that include the NDP2030, African Agenda 2063, DSI Decadal Plan, White Paper on Science & Technology, SADC Industrialization Strategy and Roadmap (2015-2063) and STISA 2024

The DSI aims to Advance strategic Africa **bilateral and multilateral** engagements in science, technology and innovation (STI) cooperation to achieve shared economic and social development in Africa, through the following

1. Promoting regional integration within the Southern African Development Community (SADC) by leveraging the potential of STI
2. Leveraging STI programmes of the African Union (AU) and AUDA-NEPAD to promote the expansion of the NSI and
3. Advance South Africa’s pan-African agenda (EU-AU Research and Innovation Partnerships)
4. Enhanced strategic focus:
    - Transformative international joint research and innovation engagements

- Building human resources through international mobility
- Strengthening and growing research infrastructure capabilities
- Promoting and enhancing STI capabilities in Africa
- Stimulating STI and trade synergies
- Attract foreign investment

5. The DSI currently has 25 bilateral agreements in the continent implemented through PoAs using different modalities i.e. Joint Research Programme and Innovation calls (co-funded by both countries), Trilaterals

Miss Gama reported that DSI is working on the following programmes the SAPhysNet can benefit from

1. Intra-Africa Mobility Programme which aims to
    a. Ignite interest among South African Students to take up study opportunities in the African continent, especially at Masters and PhD level
    b. Accelerate the career pathways of postgraduate students to become leading international researchers with strengthened academic rigour and competitiveness through increased international exposure, collaboration and mentorship.
    c. Encourage joint qualifications and exchange of students between South African universities and their counterparts in the continent.
    d. Building awareness around opportunities spearheaded by partners such as DAAD, EUC and the AU
2. Entrepreneurial Universities in Africa
3. LEAP-RE Programme : Long-term joint EU – AU Partnership on RE - a 5 year programme committed to the implementation of a joint programme addressing key renewable energy challenges, strategies and mechanisms to build a long-term AU-EU Platform for STI on RE and Placement programme for postdocs and PhD students in the energy sector (DSI-NRF and Sasol partnership).
4. Twinning Universities, TTOs, TVETS etc (Research upscale)
5. Africa Industrialisation Prog
6. OR Tambo Research Chairs Initiative
7. Engaging with Centres of Excellence
8. Develop products and Commercialize: use the AfCTA
9. Funding opportunities (SAIS, SGIC)-Joint applications
10. Support innovation projects/calls
11. Joint collaborative projects

Ms Gama will appoint an official from DSI to work with the forum and provide the additional support required.

Mr Michael Nxumalo from the NRF spoke about support for regional networks and the African corporation. He also covered future plans for a new program to foster partnerships between South African universities. Mr Nxumalo will share more details on opportunities for African cooperation.

Recommendation: Both Mr Nxumalo and Miss Gama emphasised the need for the forum to consider how it will establish a 'sustainable network', emphasising the importance of formal processes, documentation, and leadership succession and continuity. If no systems for sustainability are put in place, such networks will die out.

5 Inputs from other science networks

5.1 IUPAP Promoting Regional Networks

Prof Igle Gledhill presented on behalf of Prof Nithaya Chetty (IUPAP Vice-President at Large – Membership). Prof Gledhill highlighted the following.

- IUPAP introduced a new category of membership, Associate Territorial members, and Nepal is the first of the possible 6 Associate Territorial members
- IUPAP is actively involved in supporting the formation of regional collaborations: at present, Pacific Islands
- Regional physics networks have the lowest energy barrier to achieve a level of collaboration that is essential to growing physics in all its forms: research, postgraduate training, undergraduate teaching and curriculum development, sharing of resources including equipment and computing facilities, and joint applications for funding.
- IUPAP will support the SAPhysNet initiative

5.2 Southern Africa Mathematical Sciences Association (SAMSA)

Prof Farai Mhlanga, the SAMSA President, highlighted the association's founding in 1981, its expansion to include members from various African countries, and its annual conferences, which aim to foster cooperation and exchange ideas among mathematicians.

- SAMSA was founded by a group of mathematicians in the Southern African countries who were concerned with the furtherance of mathematical sciences in the region.
- The nucleus member countries included those from the conglomeration then called the Southern African Development Coordination Council (SADCC) with the provision that countries outside this region may apply to join.
- The nucleus member countries include Angola, Botswana, Eswatini, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, South Africa, Tanzania, Zambia and Zimbabwe.
- Today, the association boasts of membership from countries beyond Southern Africa

He also discussed the association's capacity-building programs, such as the

- STEM workshop programme for schools
- Southern African Masters Student Program
- One Health Workshop Program, which addresses the interconnection of human, animal, and environmental health.
- SAMSA Journal
- SAMSA Newsletter

Lastly, he introduced the operations aspects of the Southern Africa Mathematical Society (SAMS) and emphasised the importance of collaboration with members from other countries. In this, he covered issues of the constitution, executive committee, membership categories and how conferences and events are run and hosted.

Prof Mhlanga is available to help the SAPhysNet initiative to take lessons and learn from SAMSA.

5.3 West African Physical Society Initiative

Prof Oumar Ka, the President of the West African Physical Society (WAPS) reported that WAPS was launched in 2017 to advance physics education and research in West Africa. He highlighted the following.

- The initiative comprises seven countries from West Africa that is Benin, Burkina Faso, Côte d'Ivoire, Mali, Niger, Senegal and Togo. Website is www.soaphys.org
- WAPS is involved in the following activities
    - annual congresses with increasing scientific presentations.
    - physics newsletter.
    - WAPS physics journal with two issues per year
    - A yearly physics competition for schools and undergraduate students
- Collaboration with other physical societies and countries

Prof Ka is available to help the SAPhysNet initiative by taking lessons and learning from WAPS.

5.4 African Networks & Large-Scale Infrastructure

Professor Simon Connell, the African Light Source Initiative Chairperson, presented opportunities from African networks and large-scale infrastructure. Prof Connell discussed several Pan-African initiatives, emphasising the importance of African participation in developing networks and infrastructure for innovation, competitive industry, and a prosperous Africa. He highlighted the role of large-scale collaboration networks and infrastructure in reserving brain drain and retaining talent and possibly brain gain. His highlights included

1. The SKA and Meer-KAT project
2. The African School of Physics
3. The Pan African University
4. The African Strategy on Fundamental and Applied Physics
5. The African Light Source Initiative and the importance of light sources, and Africa is the only continent without a light source. He emphasized that it's important for Africa to have one because of the following
    - Address African Challenges through Science
    - Address all the SDGs
    - Massive Human Capacity Building
    - Leverage networks at International Synchrotrons
    - Highest caliber Science
    - Interdisciplinary
    - Science Diplomacy
    - Involve industry
    - Innovation, Competitive Industry
    - A wealthy Africa

6 Sustainable Network and Task Team Strategy

The team proposed forming a task team to coordinate efforts to establish SAPhysNet. The discussion also highlighted the potential for collaboration with existing associations or physics departments in target countries and the importance of engaging with island nations.

- Prof Oumar Ka agreed to serve on the task team, where he will share his experience establishing the West Africa Physical Society.
- Miss Lindiwe Gama agreed to be part of the task team, with the intention of providing guidance on issues related to regional science policies, science diplomacy, and exploring potential funding sources.
- Prof Azwinndini Muronga was nominated as interim Task Team Chairperson to organise meetings of the task team

7 WAY FORWARD

In line with the recommendation for the forum to establish a **'sustainable network'**, the following next steps were agreed.

1. The forum must establish a task team to establish the network with representatives from all member countries
2. Members present who volunteered to serve in the task team to confirm their participation and provide contact details Dr Brian Masara (SAIP) who will compile and distribute the list of task team members to all participants
3. Prof Mmanstae Diale (University of Pretoria) offered to coordinate making contacts with physics representatives from countries not present at the meeting.
4. Miss Lindiwe Gama (DSI) offered to bring in relevant DSI representatives to guide the SAPhysNet on relevant policies and political level science current cooperations in Southern Africa
5. Mr Michael Nxumalo (NRF) agreed to be part of the task team to guide potential NRF support and the Africa-cooperation programme
6. Prof Azwinndini Muronga was nominated as interim Task Team Chairperson to organise meetings of the task team
7. The task team was tasked to do the following
    a. Formulate terms of reference for the Southern African Physics Network initiative.
    b. To align membership with the AU's Southern region definition and DSI will assist
    c. To create portfolios within the task team such as chair, secretary, etc, and include co-option ability in its terms of reference.
    d. To explore opportunities for physics high school students' engagement across Southern African countries.
    e. To consider creating a web page listing current physics networks and platforms in the region.
    f. To consider initial projects addressing renewable energy, sustainability and climate change issues.

8. All participants must complete the online delegate registration form to receive future communications.
9. The SAIP office will interact with DSI & NRF and communicate with members regarding more details on the upcoming university networks framework launch.