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Template or guide to be completed for the Research Chairs' profile.

Please fill out the following as directed by the heading to ensure the uniformity of the profile research chairs information:

1. Paragraph should contain brief information on the Project leader, research background etc.

Mammo Muchie did his undergraduate degree in Columbia University and his MPhil and DPhil from the University of Sussex, UK. He is currently a DSI/NRF Research Professor of Innovation Studies at the Faculty of Engineering and Built Environment at Tshwane University of Technology. He is also an NRF rated Research Professor. He is a fellow of the South African Academy of Sciences, the African Academy of Sciences, Associate Fellow of the Ethiopian Academy of Science and the African Scientific Institute. He is currently adjunct professor at the Adama Science, Technology University, Addis Ababa University, University of Gondar, University of Bahir Dar, and Arsi University, Ethiopia. He is also Senior Research Associate at the TMCD Centre of Oxford University collaborating with researchers on creativity and innovation in low income economies. He has held various positions, among which include contributing a chapter to the book by Prof. Xiaolan Fu on Innovation Under the Radar, 2021 published by Cambridge University Press. He has served in many parts of the world as:

- The Director of the Research Programme on Civil Society and African Integration at the then University of Kwa Zulu-Natal,
- Professor and Founding Director of Research Centre on Innovation and International Political Economy & The Comparative Research Centre on Integration, Aalborg University
- Honorary Professor at Jiaying University in China
- Assistant Professor in Amsterdam University
- Principal Lecturer at Middlesex University, Professor at Aalborg University and part-time Lecturer at Cambridge University.
- Visiting Professor, Carlton College, USA
- Appointed as one of the focal point researcher on the South African BRICS Think Tank-BTTC Working Group 5 on Progress through knowledge and innovation.
- Consultant on UNESCO's higher education, Research and Knowledge forum.
- Appointed by NEPAD as a member of Think Tank representing Tshwane University to innovate African Integration by removing xenophobia.
- Selected as advisor for DSI in South Africa's relations with the rest of Africa.
- Top-end high level expert hosted by Shanghai University, China and Visiting Professor in Shanghai University and Senior Research Associate in the Urban Development Think Tank, Tonji University.
- Co-Founder of the Returning Talent Fund



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- Special Advisor to the African Union Student Council
- Senior Research Associate, TMDC, Oxford University, UK
- Adjunct Professor, Africa-Centre of Excellence in Data Science (ACE-DS), University of Rwanda, Kigali, Rwanda
- Adjunct Professor, Riara University, Nairobi, Kenya
- Association with University of Switzerland
- Founding Chairman of the Network of Ethiopian Scholars (NES-Global)
- Board member at the North Western University, Chengdu, China.
- Associate Faculty Professor at Sussex University, UK
- Visiting Professor at the University of Economics in Prague, Check Republic
- Visiting Professor at Jawarahal Nehru University, New Delhi, India
- Honorary Professor, UNISA, Pretoria, South Africa
- Acting Dean of the College of Scholars, ACTS, Nairobi, Kenya
- Research Method Class lecturer at Witwatersrand University
- Mentor of the Africa Entrepreneurship Award
- Support Doctoral students in the Pan-African University, Yaoundé, Cameroon
- Board Advisor of Osiris University, USA
- Board advisor of the Pan-African Youth Development and Excellence Centre
- Board Member of Kilimanjaro Innovation Hub
- Board Member of the African Entrepreneurship University
- Board Advisor of Aphrike Research Pty (Ltd) Portal for Africa student and staff database and networking
- Board Member of the College of Scholars in ACTS, Nairobi, Kenya
- Founder of the Association for South-South Cooperation in Innovation System Transformation (ASSIST Ltd) (<https://assistsarchi.wixsite.com/assist>)
- Chairman of the Ethiopian Professional Association in Southern Africa

He was part of the founding members of the Globelics initiative (<http://www.globelics.org/about-globelics/history-and-future/>) to start the new relationship between Northern and Southern researchers by focusing research on the challenges of building African innovation systems. Thus, he has made Africa to be put first in highlighting the Globelics foundation of a new field on Innovation and Development. (www.globelics.org). He is a scientific Board member of Globelics and the Globelics Academy. He is the founder and Chief- Editor of the African Journal on Science, Technology, Innovation and Development that has been founded in 2009. (<http://www.tandfonline.com/toc/rajs20/current>). He is also editor of the Globelics journal of Innovation and Development. He helped to found first the African Globelics Doctoral Academy in 2009 (<http://agda.uonb.ac.ke>) and AfricaLics (www.Africalics.org) He is part of the founding scientific board member of the network that connects North Africa, with the Middle East and southern Europe (www.medalics.org). Perhaps one of the most significant contributions to promote



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the emerging field on innovation studies in Africa was the South African research Chairs Initiative (SARChI). The first chair on innovation studies supported by the DSI/NRF in South Africa was awarded to him to promote doctoral and post-doctoral research in Africa. He is also a founding scientific advisor to 'the African Solar network (www.ansole.org). He is chairman of the Network of Ethiopian scholars (www.nesglobal.org) and is chief editor of the open access electronic journal *The Ethiopian Electronic Journal for Research & Innovation Foresight* (Ee-JRIF) (www.nesglobal.org/eejrif). He is founding editor of the new journal of creativity, innovation and Social Entrepreneurship (JCISE) (<https://sarchi.org/jcise/>) and the *Journal of Agriculture and Economic Development*, Associate Editor of the *Journal of Economics and Institutions*, University of Malaysia, **Politikon**: South African Journal of Political Studies, Taylor and Francis; **Financial Innovation**, Springer; **Social Epistemology**, A Journal of Knowledge, Culture and Policy, Taylor and Francis and many others.

He taught over 400 doctoral candidates in doctoral academies across the world in the Globelics, Africalics, Cicalics, Indialics networks. He has taken major initiatives for running Doctoral and Masters Academy in various universities in Africa and all over the world including the Association of Common Wealth Universities. Also, he has been invited for many keynote addresses and lectures in Africa and world-wide. He is the Founder of the Africa Post-Graduate Academy (<https://sarchi.org/apga/>) that has been training masters and doctoral students drawn from different disciplinary backgrounds applying the unity of knowledge approach to upgrade quality supervision.

He is currently the chairman of the advisory board of African Talent hub of the Community Interest Company (registration no.10461990) to raise funds for making Africa the talent, innovation, entrepreneurship, creativity and knowledge hub of the world. He has been appointed as special distinguished advisor to the Africa Union's Student Council and a mentor for the African Entrepreneurship award. He has initiated the African Unity for Renaissance and Global Knowledge Exchange Network (GKEN) series of conferences since the last seven years. He is a founding scientific advisor to 'the African Solar network, founding chairman of the Network of Ethiopian scholars. He has led the SIDA, Sweden funded research on engineering design and on transformative innovation for African integrated development and he does the mission of public service by engaging in social media by making TUT to be known all over the world. He is deeply committed to educate all to speed up the creation of innovative and renascent Africa. He is also a co-founding member of the Nano Technology Institute in TUT leading the innovation side of the research. He has published many books shared in many publishing outlets (<https://www.bookdepository.com/author/Mammo-Muchie>)



**Tshwane University
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He has been appointed as a scientific and academic advisor to the local e-Governance research that involved ten African countries on ICT4D funded by IDRC and managed by CAFRAD. He has been appointed as a consultant on UNESCO's higher education, Research and Knowledge forum.

He has served as a post-doctoral mentor in the NRF national postdoctoral Forum. Professor Muchie has widely published in the areas of international political economy, development economics of innovation and the making of African Systems of Innovation, and new technologies and development. Since 1985, he has produced over 475 publications, including books, chapters in books, and articles in internationally accredited journals and entries in institutional publications.

- Changing the education system with the SARChI chair motivating Tshwane University to provide space for accelerator for university students seeking a path to entrepreneurship
- University-wide initiative to submit business plans and ideas for chance to be incubated; A social innovation and social Enterprise Lab to provide mentorship, business plan boot camp, international connections and ongoing support
- Work with both commercial and social enterprise to put together best-in-class support mechanisms
- Connect the accelerator with corporate initiatives and seek to secure corporate and philanthropic support
- Secure seed funding/investment and set up further collaboration spaces, bringing academia, business and government together

2. Paragraph should be on Research Chair history (commencement year, who is involved e.g. students)



**Tshwane University
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Ever since he received the chair since 2008 to the present the research, the supervision, teaching, training, teaching and public service has been very productive and rewarding. He has guided and supervised more than 400 South African students and a considerable number of them being females nurturing their African talent and moulding and developing them with research excellence

He has been a founder by creating Output on Innovation for African Regional integration; Innovation for the Africa Unity and Renaissance Conferences, Global Knowledge Exchange Conference, Globelics, Africalics, Indialics, Medalics and Cicalics by promoting masters and doctoral programmes on Science, Technology and Innovation, doing active contribution in the Science Forum of South Africa; and support on optimal waste management to the city of Tshwane.

His scholarly contribution to the discipline of innovation has been: strengthening and contextualising the theoretical framework of National Innovation Systems as applied to the African context. The principles and theory of the National Innovation Systems, as it is practised in the developed and industrial economies could not be applied directly to the developing or under-developed and largely agrarian economies of the African continent. He has taken the mammoth task of producing an impressive body of research on the innovation systems (in whatever rudimentary forms or degrees of evolutionary state they exist) in various African countries. He has taken major initiatives for running Doctoral and Masters Academy in various universities in Africa and all over the world including the Association of Common Wealth Universities. He has been invited for many keynote addresses and lectures in Africa and world-wide. He is the Founder of the Africa Post-Graduate Academy that has been training masters and doctoral students drawn from different disciplinary backgrounds applying the unity of knowledge approach to upgrade quality supervision. 22nd Africana Post-Graduate Academy took place on July 19, 2022 on scholarly writing and publishing.

He has developed the Advanced Post-Graduate Module on Creativity, Innovation and Entrepreneurship for Tech Venture Start-Ups that has truly made a big difference. The post-graduates have created innovative ventures as a team through the problem-solving learning that he initiated and promoted. The Africana Post-Graduate Academy that has been run at different universities in South Africans 22 times in the last few years.



**Tshwane University
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He inspires students to do publications and learn how to convert their masters and PhD theses into books. He is fully involved in the dissemination of research in terms of journal publication, reviewing, education of graduate and postgraduate students, and has served as an external examiner in many universities all over South Africa and globally and training in various national and international platforms. Many of the research outcomes from all the work he has done since he started the SARChI chair in 2008 will be beneficial for South Africa as well as overall Africa.

He has done with the SARChI post-docs research on different aspect of National Innovation System of South Africa. For example, extensive research has been conducted on biotechnology innovation system, research and innovation in the universities of South Africa and so on. Many of this research has been published in reputed journals. For example, research on universities in South Africa has been published as a research paper in one of the leading research journal 'Scientometrics'. This paper has recommended university industry linkages and other measures to improve South African universities' research performance. Research work on health care innovation system in Africa 'Clinical Trials in Africa' is published as a research paper in Asian Biotechnology Development Review. Another research project on Biotechnology innovation System in South Africa has revealed the strength and weakness of the biotechnology industry in South Africa with the recommendation output for the policy and the shortcoming in South African biotechnology industry.

The policy measures recommended in the above mentioned and many other research articles based on fieldwork as well as secondary quantitative data are very helpful for policy and decision-making exercises in the South African Science and Technology landscape as well as all over Africa.

He has made substantial scientific contributions in the multidisciplinary fields of science, engineering, technology, and innovation economics since he was appointed as DSI/NRF SARChI chair over the past 14 years. His contributions have been greatly appreciated and utilized across the world; in Africa, Europe, North America, and Asia. His research publications have been cited and used by postgraduate level students and researchers alike throughout the world. His research outputs also have contributed significantly to the industry and society. Research gate, google scholars and academic.edu (<https://tut.academia.edu/Mammo>) have reported of citations that are so many. Some of his students he taught and supervised have become full professors. Research gate congratulate Prof. Mammo Muchie four times every month over the last five years recognising his research as the best read in his university.

He always is working with his research team on innovation approaches to address African pressing challenges and the possible solution through sustainable development. Over the years since he has held the SARChI chair, he has been tirelessly working on how to find solutions with innovative knowledge imagination reflecting on many challenges, issues and problems by advocating 'local solution to the local problems' or African solutions to African problems. He has received respected recognition as a one of the leading pan-African scholars in the area of economics of innovation and development. This has been revealed from the on-going contributions in different global networks like Globelics, Africalics,



**Tshwane University
of Technology**

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Medalics, Cicalics and Indialics, He has also mentored many postgraduate students in Africa and globally. He has made a significant contribution in the body of knowledge in terms of generation and dissemination of knowledge. Development economics was not linked with innovation. He is part of the founders of the new field of innovation and development that was stimulated by the book on Making innovation system by putting Africa first.

He aspires to empower and serve all Africans, and in order for his plans to be successfully implemented, he needs strategic and operational support from all African Union member states in order to foster close collaboration and partnership among the various African states. His programmes of sustainable economic development, innovation, and the promotion of indigenous African knowledge systems and applications are vital for Africans to develop their own knowledge systems, cultural norms and standards, and inclusive socioeconomic values and leadership. His ideas are consistent with the basic principles of NEPAD, which is a South African initiative in which South Africans play a role of leadership within Africa.

The work done by him in the past several years in several African states is very vital for ensuring social inclusiveness, sustainable economic development and the alleviation of poverty, unemployment and inequality. He has been engaged in creating multidisciplinary modules that are action, problem, work integrated and project based to produce and generate high quality education to make the students with the knowledge imagination to be creators, inventors, innovators, job creating rather than job seeking graduates. He has tried to make learners to become like teachers by making them generate new, tangible and action driver innovations.

3. Paragraph – comprehensive information on the successes, highlights or milestones reached.

Some of the highlights and milestones reached are as follows:

1. To develop a feeder Master's program to a Doctorate and from a Doctorate to a Post doctorate programme.

Though it was difficult to develop the new Master's and Doctoral programmes, the chair managed to initiate the Africana Post-Graduate Academy (APGA) to encourage postgraduate students to do their research by producing high quality research papers and their final dissertations and theses to be published as books. This postgraduate academy is periodically held in different universities in South Africa. The academy is opened to all postgraduates in South Africa and gradually in the rest of Africa.

A Master's on Innovation and Entrepreneurship is developed under the Department of Industrial Engineering. An advanced course on creativity, innovation, entrepreneurship for venture creation has been running for the last seven years to provide quality output with the post-graduate engineers to undertake and create start-up ventures founded by the SARChi Chair. He is truly very proud that the students are learning to collaborate and creating ventures and committing by raising seed-funding. Work integrated and action-based



**Tshwane University
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learning is now in practice at TUT engineering Faculty. The chair has moved into the Faculty to facilitate job-creating graduates from TUT and other universities in South Africa.

2. To accelerate the number of Master's and Doctoral graduates, using all available means.

The number of graduates at the masters and doctoral level has been remarkably very fulfilling. The Chair holder has supervised graduate students not only in Tshwane University of Technology but also in other universities such as Wits, UNISA and others. The milestone is generating quality graduates has been achieved.

The SARChI Chair has been invited to promote PhDs from the Pan-African Universities to help with the curriculum development for the new Adwa Pan-African University that is currently being developed.

3. To continue active mentorship of Post-doctorate researchers so that their scientific publication increases and improve.

The research publications of the SARChI Innovation studies has been in working papers, journals, books, policy briefs and media presentations. The SARChI has established a working paper series, established 3 journals, started a book series.

4. Create a blended model of postgraduate mentoring and training.

Milestones 2, 3, and 6 should be looked at in response to this one as it will be expected that when training is done, the disciplines are blended.

4. To continue the African Journal of Science, Technology, Innovation and Development and improve its rating and production to seven issues annually and put it with more established publishers to give it more recognition and global outreach. The journal is achieving global recognition by producing royalty for the Tshwane University of Technology.

5. The Chair has established and promoted a globally reputed journal named African Journal of Science, Technology, Innovation and Development (AJSTID). The journal is now widely acclaimed as an important outlet for dissemination of R&D output among South African as well as overall African scholars. It can be observed from the recent submissions of articles to the journal. The articles submission rate in the journal have grown tremendously. As a result, the journal is extended one more issue. This year AJSTID will produce 7 issues. The establishment of the AJSTID as a global reputed journal is an important achievement of the chair. It is a milestone that will have long term impact in promoting research and scholarship from Africa and globally.

Recently, the Chair has started another important journal on Creativity, Innovation and Social Entrepreneurship to facilitate students to be problem solvers and to create new social enterprise start-ups. There is a real need in South Africa to promote social entrepreneurship of hope to address the challenges of



**Tshwane University
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inequality and unemployment by applying innovative social-engineering. This journal is expected to facilitate this new approach to address the problems that South Africa continues to face.

Globelics has started a journal named Innovation and Development about 8 years ago, where the Chair is a co-founding editor.

The Chair is a co-founder of Globelics network that has also created regional networks such as Africalica, Medalics, Lilalics, Indialics, Cicalica and Eurolics. Being the member and founder of these network, the Chair has responsibility of training doctoral scholars in Globelics and regional academies across the world.

6. To continue publishing the SARChI book series that started in 2012. At least a book once in two years will be published.

From the book series initiative, over 30 books have already been published and a couple of books are in the pipeline.

The Chair has initiated and run conferences on Innovation for African Integrated and Sustainable Development with TMAIL in UNISA. The Chair has collaborated with TMAIL and SARChI UNISA to organise these conferences. A book has been published in 2019 by Springer from this important initiative.

7. To publish minimum of three articles in peer review journals with the postgraduate students and/or Postdoctoral Research Fellows.

The Chair has published many scientific papers with the postdocs and PhD students. He has delivered many keynote addresses and contributed regularly in training for Doctoral candidates all over Africa in the Africalics Academy. He has trained PhD scholars globally, for example in Africalics, Globelics, Indialics, MEDALics, Cicalics and another PhD academy. A number of the students the chair holder has supervised have now achieved the status of professorship.

8. To found a strong and sustainable South African Master's and Doctoral program in the multi-disciplinary area that combine knowledge, learning, innovation and development.

The PQM in the Department of Industrial Engineering has been developed. Now that the chair is with Industrial engineering, there is an opportunity to develop more blended and work integrated, project based, practice and problem-based learning strategies to generate high quality and very necessary and relevant training and output.

9. To continue to visible the South Africa role in Africa by continuing the Africa Liberation Conference that started in 2011 to continue annually.



**Tshwane University
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The Chair has founded the African Unity for Renaissance (AUR) series of conference in collaboration with DST, NRF, AISA, HSRC and others. From the research papers presented in these conferences, the Chair has published over five books and produced conference declarations. The AUR conferences are getting attention in South Africa as well all over Africa and has been promoted in popular news media also. He is in the Scientific committee of the African Science, Technology and Innovation Indicator (ASTII) in AUPD-NEPAD. He supports the DSI's initiative on the South African Science Forum.

1. The African Journal of Science, Technology, Innovation and development published by Taylor & Francis, Oxford, U.K, with 7 issues annually is now in the Web of Science, Scopus, DHET and other citations

(<http://www.tandfonline.com/action/journalInformation?journalCode=rajs20>) and a number of journals on Innovation and Development is a concrete achievement.

2. Producing PhDs with some of them from South Africa getting distinction is a great achievement.

Supervising and Co-supervising overall nearly 300 post-graduates and in the Globelics Academy,

Africalics Academy, Medalics and Indialics Academies I mentored and tutored over 400 Doctorates from Africa and all over the world.

3. Founder of the African Post-Graduate Academy and trained many masters and PhDs in South

Africa, also impart training on publishing to staff in universities.

4. Creator of the Advanced Module on creativity, innovation and Entrepreneurship to post-graduate industrial engineers that were able to apply from the African Entrepreneurship Award to

do venture and business start-ups was a real milestone

5. Scientific publications as a lead-editor in 30 books on innovation and development and in

highly rated journals such as Research Policy.

6. Mentoring over 20 Post-doctorates where some of them have achieved distinctions becoming

deans and directors after completing their post-doctorates with the SARChI. One of them was

awarded as the best post-doc of the 2018 year in TUT.

7. Joining the TMDC in Oxford and with DFID and Social Science Research Council funding developing a research programme on diffusion of Innovation in Low-Income Economies and publishing in Cambridge University Press on innovation and entrepreneurship

8. Executed Education Innovation and Skills project with the post-docs and the output was presented at the UN for promoting SDGs

9. Serving to provide critical feedback to the 2024 African Union Science, Technology and Innovation plan and contributing to the White Paper on Innovation System in South Africa. Recommended strongly the Sovereign Wealth Fund to be included in the White Paper and the South Africa Treasury has now set up the fund.

10. Working to generate a new theory by adding to the learning, economy, and economics of



**Tshwane University
of Technology**

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hope a new economics of social innovation and entrepreneurship of hope by writing a new theory on how an integrated and unified development can be innovated in Africa with validation criteria that is not purely commercial, but also adds social, health, knowledge and environmental validation criteria. We have also founded with support from TUT a new Journal of Creativity, Innovation and Social Entrepreneurship to make sure South Africa creates the economic transformation to create zero poverty and zero unemployment.

11. Joining the ICT4D niche area to develop an African -centred innovation system by adding STI4D and bringing new synergy to advance theoretical advanced novel unity of knowledge

12. Promoting innovation-based Podcast and policy briefs through SABC, radio and the Thinker and other relevant outlets to fulfil community service. The latest done is a podcast as a keynote lecture title “Mind – set and Paradigm Shift to Re-Think and Re-Design the economics of Innovation and Development” (<https://iono.fm/e/829972>)

13. IDRC funded research on how to develop an African contextualised grassroots innovation indicator with UNU-MERIT, Sussex University, NEPAD and a number of African researches on innovation. The output has been published as a special issue in AJSTID Vol. 4, no.2 and a book is in the process to be published.

14. SIDA funded the Innovation and engineering design programme where the SARChI chair is leading the research programme with all regions of Africa included in the collaborative research. A book on Engineering and mathematical modelling is in the process of being published.

15. Two major EU applications have been initially accepted and waiting for final approval where the SARChI is partner with Prof. Franco Malerba and ARTES in Switzerland to develop collaborative research on sectoral innovation system including the African context in the research. We have won the EU Horizon 2020 research on innovation for catching up with the global value chain in the 4th Industrial Revolution

16. Editorial board member in the book editors series by Springer on innovation and development and a book series editor on science, technology and innovation by Africa World Press in Princeton New Jersey, USA. And director of Real African Publishers

17. Contributed to the Africa innovation Summit and one of my PhD students has published a book in 2016 Innovation Africa with my contribution as the first chapter introducing how to re- think and re-design innovation and development economics in the African setting.

18. Founded the African Talent hub to create ways of how we can transform the African youth by creating incubation and opportunities to turn graduates from job seekers to job creators (www.pati-global.com)

19. Managed to get African young inventors and innovators to exhibit and network in Kigali in October 2017. It was truly inspiring that young African inventors and innovators did exhibit their creative talent

20. Appointed as judge to award when 200 innovators competed in the Africa Innovation week. 50 Awardees benefited from funds provided by Norway and UNDP.

6. Lastly is what's next?



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- In the Next five years, the SARChI Innovation Studies is planning to promote and develop creativity, invention, innovation for 'social entrepreneurship of hope' in South Africa in particular and more widely in Africa.
- All the works the Chair has done can be consolidated by making research to solve real problems in South Africa. New research focusing on the 'social entrepreneurship of hope' is very critically needed now to address the economic and social disparities and problems that persists in South Africa and the rest of Africa.
 - The chair has been the founder of Global Network of Ethiopian scholars (www.nesglobal.org) and he has also founded the open access Ethiopian Electronic journal on research and innovation foresight <http://www.nesglobal.org/eejrif4/index.php>. This journal has is now being run by engineers in Bahir Dar University. (<http://journals.bdu.edu.et/index.php/eejrif4>)
- The chair has been promoting inter-African university collaboration to build the African science, technology, innovation infrastructure by encouraging student and staff mobility. He has facilitated universities from South Africa to have MoUs with Ethiopian and other universities.
- The SARChI chair will work on unique novel innovation to do research that has never been done before: How to re-develop development and re-innovate innovation and change economics to include a new validation of success by including and environmental gain to economic, market and commercial gains.
- SARChI will do new innovation by doing the following: un-think to rethinking, un-learn to re-learning, un-design to re-designing, un-engineer to re-engineering and un-science to re-science and un-political- economics to re- political- economics, un-theorise theories and un- conceptualise conceptual frames with human and nature wellbeing as the priority of priorities.
- The SARChI chair will develop the required holistic innovation system to make the future to be anchored by drawing lessons from the mistakes of the past and the present to develop human life for all without inequality, poverty and unemployment to bring full decent wellbeing for both people and nature with peace, justice, safety and security without war, conflicts, pandemics and climate change
- Create Transformative, Holistic and sustainable innovation system that will make the security and safety of nature and the livelihood and wellbeing of the people the priority of priorities.
- He has founded ASSIST to promote North- South-South collaboration(<https://assistsarchi.wixsite.com/assist>)
- The conference and book on China-Africa Science, Technology and Innovation Collaboration will be produced to create how innovation to create relations based on mutual benefits can be developed.
- The UNGA Science Forum and the World Science Forum are also working with the SARChI chair on how we can create innovation to transform, reform and perform by reconceptualise and re-frame both innovation and development.
- Entirely innovation has to be re-defined as it has been defined with novelty and usefulness. But how have novelty and usefulness been validated? They have been validated narrowly by commerce and market. The validation criteria for both



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novelty and usefulness has to be transformed. There should be an inclusion of wellbeing, services provision, and environmental protection, humanitarian criteria above the current dominant validation by merely market, commerce and economics including the current dominating e-commerce expansion.

- A new hybrid synthesis imagination is much needed by building a new synergy between development and innovation system. Economic gain to make profit is not sufficient. There must be social-wellbeing gain and environmental protection gains. Synergise informal with formal economy, indigenous with modern all knowledge and not merely prioritize the economic variable by excluding the social and environmental gains to undertake both innovation and development.
- A new paradigm shift to both innovation and development is what the SARCh chair will work and produce original research output that hopefully can make a difference in changing the world as it is not going well in our time.
- Africa needs to construct an integrated, networked and unified sustainable development innovation system path by coming together rather than by going alone facing the prisoners' dilemma being caught within the boundaries of each of the 55 states. A new innovative approach to handle the rich resources and how to create both production applying high technology and innovation and creating consumption by making the African production to consumption value chain is much needed to address now more than at any time as the global value chain is changing dramatically with the 4th Industrial Revolution.
- Promote social innovation and social entrepreneurship to create zero poverty and zero unemployment and inequality in South Africa and the rest of South Africa applying to all the citizens' innovative services with the sovereign wealth fund.
- Research Collaboration with one another in Africa on science, technology, innovation to enable mutually beneficial relations to promote the unity of Africa
- Science, Technology and innovation research for peace, social justice and security

 **Emphasis should be on the research chair and its activities.**

Thank you.