

Common Challenges - Innovative paths to improved well-being through co-creation between academia, governmental- and private actors and civic society

Summary

The project is a joint partnership between institutions in Sweden and Rwanda. The objective of the project is to build a collaborative partnership that shall engage in addressing common challenges in the areas of universal access to clean cooking, addressing health, gender equality and multiple sustainability aspects; food sustainability and health; interaction between the health care system, public authorities and academia. Work packages (WP:s) will integrate research with crosscutting themes focusing on Challenge-Driven Education (CDE), innovation, research ethics and gender in the project activities. While all partners bring their own expertise and experience into the project, the overall work will be marked by collaboration, knowledge exchange and long-term relationship building.

The strategic focus areas of the Swedish university partners correlate well with the Rwandan goals described in the Rwanda Vision 2050 and the National Transformation Agenda (NST-2) of the Rwanda Government, both which address the goals of Agenda 2030, aspiring to transform Rwanda into a competitive knowledge and technology-based economy at regional and global levels. Rwanda thus presents a strategic opportunity for the Swedish university partners to innovate and to create strategic and sustainable partnerships on mutual knowledge-transfer. In addition, there is a need for the Swedish partners to improve the formulation of scientific questions from a more global perspective.

Collaboration with competent researchers in a different context is key. Learning from the collaboration will lead to a more resilient research and education culture for the changes that the Swedish partners will face in the future.

KTH Royal Institute of Technology recently included Africa in its international strategy, due to the rapid developments on the African continent, with increasing focus on innovation, the importance of sustainable and just development in Africa and the rest of the world, and a growing young ambitious population in need of higher-education alternatives. We build on decades of cooperation of capacity building. Now, our aim is to further deepen and broaden these efforts, transitioning towards mutual partnerships, emphasizing the significance of mutual learning, development, and transformation in education and research, with the overarching ambition of fostering students and researchers as change agents for a more sustainable and just society.

The strategies for Stockholm University (SU) underline that the main role of research is to develop knowledge within both new and traditional disciplines, and in the intersections between the two. The world is at a critical stage where free research and higher education are key contributors. Science is crucial to achieving the UN 2030 Agenda for Sustainable Development. Through collaboration within academia, and with other societal actors, the university will increasingly contribute with scientific analysis in the strife for a better world. Collaboration is part of the development of activities and involves an interaction in which flows of ideas, problems, knowledge and resources between the university and external actors lead to mutual development. In addition, the strategies stress the inherent innovative power of free research, and how this is crucial to the breadth, diversity and excellence of research. It creates progress; free basic research produces future innovations. SU will continue to emphasize its strong basic research profile, and the importance of research for knowledge development, research utilization and solving societal challenges.

Moreover, higher education institutions play an important role in science diplomacy, particularly for small countries like Sweden and Rwanda, where networks for education, research and various businesses are of major importance. The methodology of CDE plays an important role for the civic engagement in local environments and connections to external actors outside the academic sphere. Additionally, innovations springing from ideas born in our universities are important for the transformation towards a more sustainable and just society on both local, national and global level. Therefore, the innovation ecosystem support embedded to this project plays a significant role in ensuring both short-, medium- and long- term impact of this collaboration.

Background

Global challenges materialize locally and render solutions in a specific context based upon the knowledge and resources available. Scaling local solutions could be a driving force for innovation uptake, and specifically those that are developed in emerging and developing economies offer unique opportunities to explore innovative solutions to global challenges. This offers an opportunity for universities in Sweden to develop their capacity to understand the challenges present in emerging economies and integrate these into the context of education, research, and innovation. In addition, social challenges linked to the SDG:s, provide opportunities for high impact and "out of the box" solutions which in turn often generate new research topics that inspire faculty to move into new domains. An obvious additional value in this project is the coming-together of the various academic disciplines at the Swedish institutions to create a trans-disciplinary approach to the identified challenges in an international context.

The ambitious development scheme for Rwanda, puts the country in a position to be one of those countries in Africa contributing the most to Africa's global influence, not least related to innovative solutions for a more diverse and resilient innovation ecosystem. Therefore, it is of great importance that Swedish universities are a part of this transformation, to learn and to share experiences and knowledge in this process. The project will prioritize collaboration with an existing network of researchers and alumni as well as creating new partnerships, to access the emerging knowledge base, innovation growth and thriving ecosystems in Sweden and Rwanda.

The key resources in Sweden and Rwanda are the young people who want to develop a better society and better life for themselves and others. Empowering these individuals by bringing them into close contact to the solution domain created by co-creation and co-crafting, mentored by committed representatives from the partner institutions and external stakeholders, transferring the societal problems to opportunities, will create a wealth of changes in the education-, research- and innovation- cultures and structures in both countries. This will also, in the long term, contribute to heightened competence by enhancing the ability of individuals to act within a global context. This is well in line with the established fact that university partnerships and science diplomacy play an important part in the Swedish foreign policy context, and here the role of the universities is of great importance.

Partners

This project is a partnership that brings together partner institutions from Sweden and Rwanda, listed below. The profiles of the partners are described in the letters of endorsement, and the involvement in the project is detailed in the work packages (WP:s).

The Swedish partners are:

KTH Royal Institute of Technology (Coordinator) – KTH

Stockholm University – SU

The Rwandan partners are:

The University of Rwanda – UR

Rwanda Polytechnic – RP

Associated non-funded partners:

National Council for Science and Technology – NCST

Rwanda Development Board – RDB (Signed by Ministry of Public Service and Labour)

Challenges to be addressed

The partners have in agreement chosen to focus project activities on three identified common challenges. These are

- Universal access to clean cooking, addressing health, gender equality and multiple sustainability aspects;
- Food sustainability and health;
- Interaction between the health care system, public authorities and academia around the acceleration of digital transformation in health data, using key technologies, initiatives and pathways to enable the digitalization of health care.

Further details are to be found in the work package (WP) descriptions.

The project's key areas will form one single strategic and concerted initiative. **Health/nutrition** is the common focus area, albeit from different perspectives. The reasons for choosing this focus area are numerous, such as

- Better health can prevent or offer a route out of poverty. Evidence shows that better health translates into greater, and more equitably distributed, wealth by building human and social capital and increasing productivity. Healthy children are better able to learn, while healthy adult breadwinners are more able to work and provide for their families (World Health Organization Executive Board EB105/5 105th Session 14 December 1999, and Heckman, J. J. Skill formation and the economics of investing in disadvantaged children, Science 2006;312:1900–2). Those living in poverty will be more affected by infectious diseases, natural disasters, diseases/health problems (especially in children). Therefore, health inequality is an important aspect.
- The top two out of ten major causes of poverty around the world are lack of access to clean water and nutritious food and lack of access to basic healthcare (World Vision Canada, March 1, 2022).
- One of the top causes of global poverty is poor healthcare systems – especially for mothers and children. In countries where health systems are weak, easily preventable, and treatable illnesses like malaria, diarrhea, and respiratory infections can be fatal — especially for young children (Relief Web, March 4, 2020).
- Traditional cooking with wood and charcoal has pervasive health implication, causing approximately 3,2 million premature deaths annually and impedes progress on gender equality and environmental quality goals (Tracking SDG 7: The Energy Progress Report (IEA, IRENA, UN Statistics Division, World Bank & WHO, 2022).

In addition, the project will include cross-cutting themes integrated into the project activities related to the identified common challenges. These are illustrated in the table below and are; education focusing on CDE, innovation, research ethics and gender, outlined in WP4, with concrete examples of implementation and impact in each of WP 1-3.

	WP1: Universal access to clean cooking	WP2: Food sustainability and health	WP 3: Interaction between the health care system, public authorities and academia around the acceleration of digital transformation in health data
WP4 Education			
WP4 Innovation			
WP4 Research ethics			
WP4 Gender			
WP5 Mobility for young researchers			
WP6 Management			