



## PARTICIPATORY ACTION RESEARCH -

# Bridging the gap between science and society through the Science Shop model

In pursuit of a society that critically engages with science and technology, participatory research action grants have been awarded to local public universities under a 'unique' Science Shop model in support of the strategic imperatives of the Science Engagement Strategy (SES). This Science Shop initiative is funded by the Department of Science and Innovation (DSI) and forms part of the system-wide science engagement programme that seeks to build a society that is scientifically aware and literate, culminating in publics that do not only participate in scientific dialogues, but are also able to confidently form and express independent opinions on science issues.

To encourage universities to pursue participatory research action agenda, the South African Agency for Science and Technology Advancement (NRF-SAASTA) sanctioned research grants to the University of Cape Town, Durban University of Technology, University of the Western Cape, Cape Peninsula University of Technology, North West University and University of Pretoria. The projects, which started in September 2022, vary in terms of length, from one to three years and have a total budget that is over R10 million over this period.

The Science Shops in support of SES is 'unique'

in its design and is intended to promote equity in accessing funding and cost effectiveness of the overall endeavour. Hence, a Science Shop facility in the context of the SES is defined as a community-based research endeavour undertaken by a university over a defined period of time, within a defined scope and awarded grant funding, where universities have an equal chance to participate in the DSI-funded, community-based research, and are thereby afforded an opportunity to contribute to the advancement of communities.

### University of the Western Cape

**Project Leader:** *Professor Jacqueline Goldin*

**Academic Disciplines:** Anthropology, water sciences, hydrology, research methodology

This research endeavour takes place in Hout Catchment in the Limpopo Province, an area where 74% of people depend on groundwater and in some municipalities, 100% of residents depend on water from their wells. The project seeks to address the mismanagement of groundwater resources that could potentially lead to adverse impact effects on ecosystems, water access, human health, and agricultural production. Groundwater resources are vulnerable to depletion and degradation if not protected and exploited sustainably, which

requires knowledge of the human interaction with the groundwater resources and potential adverse impacts. The project employs a citizen science approach whereby the lay person trained to act as 'citizen scientists' participate in the research process of designing the research, collecting, and analysing data and results leading to finding solutions to the problems.

### University of Cape Town

**Project Leader:** *Professor Leanne Scott*

**Academic Disciplines:** Operations Research/ Statistical Sciences

The UCT in collaboration with community-based non-governmental organisation (The Emma Animal Rescue Society or TEARS) in the Ocean View/Masiphumelele community in Cape Town, will seek to describe the community perspectives on animal health and welfare, which forms part of the portfolio of projects described above. The project will engage with the community and local animal welfare organisations to co-create solutions for pressing animal health and welfare concerns that also affect human health and welfare. Through the community-based co-investigator, information points to a complex and systemic nature of animal health and welfare challenges in the community, as well as to the need for integrative approaches in addressing issues such as companion animal care, stray animals, and animal cruelty (e.g., through dog fighting). Human health and welfare are impacted through aspects such as zoonoses, dog bites, and stresses associated with the inability to care for companion animals.

### Durban University of Technology

**Project Leader:** *Professor Raisuyah Bhagwan*

**Academic Disciplines:** Social Work, Child, and Youth Care

The deep impact of HIV/AIDS and more recently the COVID-19 pandemic, has given birth too many child- and granny-headed households, which entrenches the vulnerabilities of South African children who are orphaned or abandoned. There are few spaces where children can engage in developmental activities, play, or benefit from positive peer support

and consequently, these children are at risk for substance use, pregnancy, school drop-out and other social ills. Similarly, those left to care for these children, be it elder siblings or elderly grandparents, are without any form of help and support in these spaces. They grapple with having to serve as parents to those who are their siblings or grandchildren and face a multitude of struggles, both financial and psychological, to ensure the best care for these children. The DUT's community-based participatory approach creates safer physical and psychological space for children and these diverse families to thrive in. Both with the intellectual resources of the university and through tapping into the wisdom and strengths of elders and community leaders, these deep rural villages can be reconstructed into safer spaces together. Students and academics can train rural men and women to better support child and granny-headed households. Of significance is the fact that these rural spaces can be reconstructed into field placements sites not only for student training but also for final-year students to share their expertise in training rural men and women to support the child and granny-headed households.

### Cape Peninsula University of Technology

**Project Leader:** *Professor Maretha Opperman*

**Academic Disciplines:** Nutrition, Consumer Science, Food Science and Technology and Business

The CPUT project seeks to empower subsistence fisher women of the Weskusmandjie cooperative to produce, identify and market safe food products through a participatory research approach and therefore, contribute to poverty relief, job creation and zero hunger. The Weskusmandjie (West Coast Basket hereafter referred to as Weskusmandjie) cooperative united women from the West Coast fishing community to address their economic needs and aspirations through a jointly owned community enterprise. They produce home-made food items, which are sold directly to community members but also via a digital platform for fishery product marketing. Unfortunately, the survival rate of cooperatives in South Africa has been dismal. Poor education and business training of cooperative members contribute to this problem as training is >



often generalised and unrelated to the product or service being offered. Retraining rarely takes place to address the cooperative's values, principles and policies that govern its success. As cooperatives are further faced by economic challenges brought on by pandemics such as COVID-19 as well as droughts, floods, and other weather hazards, they are often unable to adapt. To prevent the Weskusmandjie from heading in the same direction as other South African cooperatives it is proposed that they receive training on food product and business development to ensure business sustainability and adaptability while simultaneously contributing to poverty alleviation and job creation as contextualised within the 2030 Agenda for Sustainable Development.

#### North West University

**Project Leader: Professor Lesley Wood**

**Academic Disciplines:** Education, and collaboration with other faculties as determined by needs as they arise (e.g. Computer Sciences, Health Sciences, Law, Natural and Agricultural Sciences etc.)


There are two major interrelated issues currently facing education in South Africa. The first is the poor quality of education for most learners, and the other is that learners exiting the system find it increasingly hard to compete against their more privileged peers to access higher education and/or employment. This situation was further exacerbated at the height of COVID-19, which highlighted the educational fault line between privileged and underprivileged sections of society, as school closure deprived children in township and rural contexts of education. The participatory research approach by the NWU addresses both issues by mobilising unemployed township youth and unemployed university graduates to lead community action to provide alternative educational opportunities to complement and enhance formal education, not only in this time of crisis, but on a sustainable basis. The project will generate knowledge about how to enable relevant learning to continue, whenever formal education is failing to equip learners to learn and develop to a level required for them to improve their life opportunities. Furthermore, the project addresses another pressing issue, that of young people who have completed formal education but are unable to

access further training or employment (commonly referred to as NEET). Through its existing research partnership with a youth skills development agency (a non-profit organisation) in Khuma, an impoverished township in the North-West Province, researchers will seek to take a unique approach of taking the Science Shop facility to the community.

#### University of Pretoria

**Project Leader: Dr Carin Combrinck**

**Academic Disciplines:** Architecture; Family Medicine; Public Health; GeoInformatics; Social Entrepreneurship; Leadership; Sustainable Development

Rapid urbanisation in South Africa is exacerbating the socio-spatial inequities of apartheid planning, resulting in the emergence of informal settlements across the urban landscape. Since the dawn of democracy in South Africa, policies have been established to assist in this process, most of which have not been implemented successfully. Most concerning is the impact on women and children growing up in these settlements, where pending citizenship status and economic migration intersect with inadequate essential primary care including maternal and child health, dietetic and sanitation facilities and a lack of education opportunities, resulting in the perpetuation of these cycles of poverty and despair (Kittay 2002). These daily frustrations and survivalist strategies undermine the possibility of social cohesion and agency, contributing to a decrease in governance and accountability. Without a collective seat at the table, residents of informal settlements cannot make a meaningful contribution towards the co-production of space as described by Lefebvre (1991), thus their voices cannot be included in the implementation of policies pertaining to them. High-level data collection, surveys and imposed intervention strategies fail to include the communities themselves in unpacking the micro-scale challenges and potential solutions that could serve to address immediate concerns. Through the continued exclusion of communities in the process of research and production of knowledge, policy instruments remain ineffective in addressing the most pressing concerns of human dignity and safety in these settlements. 

New approaches to engage communities and society across the full cycle of NRF funded research



# NRF Engaged Research Framework

## Strengthening the Delivery of Excellent Research for a Better Society

*New approaches to engage communities and society across the full cycle of NRF-funded research*

**S**cience systems across the world are increasingly recognising the importance of the broader societal impact of research, which includes the interdependent dimensions of social, economic, and environmental impact. Given the significant shifts over time, both nationally and internationally, in considerations of knowledge production; the roles of the university as a public institution; the nature of the relationship between science and society; social responsiveness; and societal impact (among others), the NRF has adopted the “Engaged Research Framework” to

underpin the organisation’s Vision 2030 of ‘Research for a better society’.

Engagement in the research process can be realised across the full cycle of research: Upstream of research during identification and development of research priorities and strategies, and the formulation of research questions and proposals; Midstream of research through the involvement of publics and communities within the research process itself; and downstream of research through ensuring the utilisation of research and innovation outputs and impacts via engagement with communities once >