

Community Water Supply and Sanitation Unit's Research

Published and ongoing research

A. Ongoing

2014/2016:

Approaches for Emerging Farmer Participation in Water Resource Management: The Case of the Breede-Overberg Catchment Management Agency (BOCMA), Western Cape (Water Research Commission Project K5/2310 – ongoing)

Authors: Lagradien, A., and Ncube, B.

The objectives of the project are to assess the progress made in water allocation to emerging farmers in the Western Cape, with emphasis on two case study areas in the Breede-Overberg Catchment. The project will explore the challenges that are faced by emerging farmers in accessing water. The research will then explore opportunities for engaging emerging farmers in accessing water and ensuring continued active participation in water user associations. The study will hopefully come up with an approach that can be duplicated in other South African regions that are facing similar challenges.

2013/2015:

An investigation into the social, institutional and economic implications of reusing reclaimed wastewater for domestic application in South Africa (Water Research Commission Project no. 2208).

Authors: Lagradien, A., Muanda, C., Owen, G., Goldin, J., Cousins, D., and Ncube, B.

This project is at the second phase and produced so far two deliverables:

- The reuse of reclaimed wastewater for domestic application and its implications
- Enabling factors contributing to the use of reclaimed water – Understanding of specific institutional factors, capacities and strategies for treatment and reuse of reclaimed water for domestic applications

This research emerges from the need to finding alternative water resources in South Africa (given the growing water scarcity index). Reuse of reclaimed is seen as a viable and cost-effective alternative; however given the socio-cultural background of South Africa, introducing reclaimed water reuse can have several implications including social, institutional and economic that can impact on the initiative. This research is intended to investigate and address these issues and the final outcomes will be an approach to introducing reclaimed water reuse in South Africa.

2011/2014:

Insights into Indigenous Coping Strategies to Drought for Drought Adaptation in Agriculture: The Southern Cape Scenario (Water Research Commission Project K5/2084 – ongoing)

Authors: Lagradien, A., Ncube, B. and Muanda, C.

The aim of the project is to identify and capture current and past local coping and adaptation strategies and actions in the farming sector in the Southern Cape that may inform future drought adaptation and risk management strategies. In order to achieve the research aim the project follows three key research objectives:

- Consolidate international and local experiences on capturing local and indigenous knowledge around adaptation to droughts in the agricultural sector;
- Identify and capture any local adaptation measures in the agricultural sector for dealing with the 2009-11 drought and previous droughts;
- Identify an appropriate drought adaptation approach that balances between local/indigenous knowledge and modern scientific knowledge.

2011/2014

Adapting and piloting the new concepts of Community-Led Total Sanitation (CLTS) into the South African municipal environment (Water Research Commission Project K/5 2088)

Authors: Lagardien, A. and Cousins D.

The CLTS pilot study picks up on community-based approaches to deepen possibilities where our previous partnership approaches projects have left off. It is an approach that is deeply embedded in the concept of community-based and attaches to practical outcomes more than most projects we have previously undertaken. Community led actions are based entirely on local responses, choices and the building of collective knowledge, furthering understanding of Community-Based Approaches in a most literal sense. The relation between technical and organisational support for responses and endeavours led by vulnerable people who are those living the everyday reality of unacceptable risk, remains in sight.

B. Forthcoming

2011/2012:

An Investigation into sanitation solutions for informal settlements (Water Research Commission Report 2098) produced one deliverable:

- *An Approach towards developing technical sanitation solutions for informal settlements* (forthcoming)

Authors: Lagardien, A. and Muanda, C.

This research was intended to address success and failure of sanitation solutions in informal settlements by investigating existing and new sanitation technologies. The aim was to understand what drive the development of sanitation technologies and key concepts and process used (referring to Bill and Melinda Gate Foundation Sanitation innovation). The product emerging from this research is an approach for developing sanitation concepts and solutions for informal settlements that suggests stages that should be followed in order to develop sanitation solution that responds to the conditions pertaining to the settlement.

C. Published reports

2010/2011:

User acceptance and functioning of mobile communal sanitation facilities in informal settlements of South Africa (Water Research Commission Report 2017)

Authors: Lagardien, A. Muanda, C. and Benjamin, A.

This research produced two deliverables:

- **User acceptance and functioning of mobile communal sanitation facilities in informal settlements of South Africa** (WRC report no. 2017/1/12)
- **A Guide to Sanivey – Assessing user acceptance and functioning of Mobile Communal Sanitation Facilities in Informal Settlements** (WRC report TT 533/12)

This research was stimulated by the failure of large number of sanitation technologies provided to informal settlements (in South Africa). The aim was mainly to understand why existing sanitation fail and new one are being introduced (especially mobile) and investigate users p[erceptions regarding the introduction of mobile sanitation facilities. The final products of this study are the framework for assessing user acceptance and functioning of mobile communal sanitation facilities in informal settlement of South Africa. This framework provides stepwise on how to introduce mobile sanitation facilities in informal settlement - and the Sanivey (software) was developed to assist in assessing issues related to users acceptance and functioning of mobile communal sanitation facilities.

2009/2010:

Interactive risk reduction approach - An Approach to Reducing Risks and hazards from Human Waste generated by Informal Settlements: Community-based Risk Assessment with Municipal Partnerships (WRC K5/1901) Report no. 1901/1/11
Authors: Lagardien, A. Cousins, D. and Benjamin, A.

This research aimed at developing an alternate approach to planning effective risk reduction measures by facilitating municipal partnering with communities. The premise for forging partnerships was that of engaging stakeholders who are instrumental in producing the risks, municipal departments on the one hand, and affected residents on other hand, in sharing responsibility for effecting change in response to risk management.

2007/2008:

Guidelines for the integration of community-based procurement for providing operation and maintenance services for basic water and sanitation provision by municipalities (WRC project 1714) produced two deliverables:.
Authors: Lagardien, A. Muanda, C., Cousins, D. and Zindoga, C.).

- **A Research report: Investigation into Unlocking and Integrating Community-Based Procurement in the Operation & Maintenance of Basic Services** – WRC report 1714/1/09
- **Guidelines: The integration of Community-Based Procurement in the Operation & Maintenance of Basic Services** – WRC report TT423/09

Community-Based Procurement for Improving Operation and Maintenance of Basic Waste Disposal Systems: Sanitation, Greywater and Solid Waste emerged as a key poverty reduction topic that will embrace the above research project outputs. The guidelines suggest comprehensive steps that should be followed to involve communities in the operation and maintenance of basic services (including water and sanitation).

2005/2006:

Strategic Approaches in the Provision of Sanitation Services to Informal and Un-serviced Areas (Water Research Commission Report No.1438/1/05).

This product provided the basis for wider evaluative research and tools for application at local authority level.

Authors: Lagardien, A. and Cousins, D.

Guidelines for Sanitation Delivery Programmes was developed as an attachment to the above report, and included:

- An Assessment Tool for application by local authorities for the evaluation and improvement of their current delivery approaches.
- Evaluation of the Delivery of Sanitation, comparing a structured evaluation of three metro case study's approaches was collated as learning materials for capacity building purposes.
- Case Study materials: Durban, Johannesburg and Cape Town

2004:

Sanitation Demand and Delivery in Informal Settlements - Planning and Implementation Support (Water Research Commission Report No. 1280/1/04).

Authors: Lagardien, A. and Cousins, D.

This product provided the basis for further research of strategic approaches.

- Key Strategic Elements governing sanitation programme design were identified, based on data generated from case study sites to establish the extent to which key strategic elements manifest in current approaches.
- A Planning Framework for Sanitation Programme Design, incorporating the strategic elements was generated for application at a local authority level.
- Local Authority Protocols for Sanitation Services in Informal Settlements were investigated in respect of their alignment with Vision 21 and national policies (White Paper on Basic Household Sanitation, and revisions) and government guidelines and programmes. The methodologies for developing Local Authority Protocols were reviewed.
- An Implementation Framework, including Levels of Service approaches, institutional arrangements and local policy requirements was developed, as informed by research, and validated by stakeholder reference groups.

2002/2003:

Evaluation of the Western Cape Farmdweller Sanitation Pilot Programme (WRC K8/354)

This study, along with an evaluation of an Eastern Cape Pilot Programme, formed the basis of the national Farmdweller Sanitation Policy.

Authors: Lagardien, A. and Cousins, D..

2001:

Improving Sanitation on Farms: Lessons from the Farmdweller Sanitation Pilot Programme and the Emerging Western Cape Model (WRC Report No. KV 132/1/01).

Authors: Lagardien, A. and Cousins, D.

Four reports associated with the final product were:

- Health & Hygiene Awareness (KV 132/2/01)
- Formative Assessment of Project Initiation (KV 132/3/01)
- Formative Assessment of Subsidies, Technology Options and Choice (KV 132/4/01)