

BASELINE NARRATIVE REPORTING DOCUMENT

UNIVERSITY OF VENDA

In lieu of the full baseline data collection exercise taking place, please complete the following reporting document. One overarching document for the whole consortium is preferred. However, if it is easier, we are happy to also accept one form per consortium partner.

While the document predominately uses a narrative reporting format, we have also included space for inclusion of any quantitative data that may be available. Please try to include as much quantitative data as possible.

In addition, the final part of the form requests publication and grants data relating to co-applicants (named personnel within the original bid document). These are vital for successful review of the progress of the African Institutions Initiative and we request that you provide as much data here as possible. Any queries regarding the forms should be sent to: r.e.hanlin@open.ac.uk

Please endeavour to return the completed form(s) to us by **30th November 2010**.

PART A: Capacity baseline

1. What was the situation with respect to scientific/ research related human resources capacity (research active staff, post-grads) within your relevant field of activity in your African partner institutions at baseline (September 2009)?

Narrative report:

At Venda University research is conducted by Academic staff and post-graduate students (Hons, MSc and PhDs).

The staff and students that are doing research in the water, sanitation and environmental health areas belong to the School of Mathematics and Natural Sciences (Depts. of Microbiology, Botany, Chemistry and Zoology), School of Health Sciences (Depts. of Public Health, Nutrition and Advanced nursing sciences), and School of Environmental Sciences (Depts. of Hydrology and Water Resource Management). The academic staff conduct research as part of their institutional responsibilities while the students undertake research for their thesis under specific supervisors in each department.

At present there are no specialised courses (BSc, Hons, MSc or PhD) in water and sanitation, but Prof Natasha Potgieter is developing a course for MSc and PhD studies in the School of Mathematics and Natural Sciences.

Currently the department of Microbiology is actively involved in research on water, sanitation and hygiene issues in rural and peri-urban areas in Southern African countries. Several Hons, MSc and PhD students are actively busy with projects in the department.

In practice, the academic and admin workload of many of the academic staff is making it impossible for many staff members to actively be engaged in research activities.

Any additional supporting quantitative data:

2. What relevant training courses/ programmes (for post-graduate teaching in particular, but also professional development) were available within the partner institutions at baseline (September 2009)? Please distinguish between courses/ programmes available in Northern institutions and African institutions if possible.

School of Health Sciences:

MSc Public Health

Modules included in this degree:

Introduction to public health

Introduction to epidemiology

Social and behaviour context to health

Electives include:

Health measurement

Occupational and environmental health

Health education and health promotion

Communicable diseases

Non-communicable diseases

Primary health care administration

School of Mathematics and Natural Sciences:

MSc and PhD in Microbiology doing a research project on a specific topic in water, hygiene, sanitation and environmental health

Modules in addition offered by school include:

Environmental microbiology

The role of microorganisms in disease

The role of microorganisms in the environment

School of Environmental Sciences:

MSc and PhD in Hydrology and Water Resource Management

Modules in addition offered by school include:

Water quality principles

Rural water supply and sanitation

Pollution

Development of specific programmes/courses

Prof Natasha Potgieter is developing a course for MSc and PhD studies on Water, Sanitation and Health in the School of Mathematics and Natural Sciences – to be submitted to SAQUA before September 2011. To be implemented 2012.

Any additional supporting quantitative data:

3. What was the situation with respect to research management, governance and administration structures within your relevant field of activity in your African partner institutions at baseline (September 2009)?

The University organisational structure for research and research management is both at the Institutional and faculty levels. Each School has a research committee which approve all research proposals before they go to the Research Directorate.

The research and development Directorate was established in 2000. This was followed by the development of the Research and Development Policy in 2001 which was amended in 2005. The implementation of the research policy has been able to establish a small critical mass of researchers who are participating in research in various disciplines. The University has internal funding for research projects, conference attendance and to defray publication costs. Some of our researchers manage externally funded research projects and others do consultancy work for Local / Provincial government departments and other stakeholders. Univen supports research linkages and partnerships. Univen has linkages and collaborations with other Universities nationally and internationally and also partners with other entities such as government departments, NGO's, private sector and industry. Strong research partnership exists currently with the Limpopo provincial Government through the Limpopo Research Forum and the Limpopo Integrated Innovation Forum which bring together managers of research and developers of technologies in the Provincial tertiary institutions, Provincial government departments, private sector, NGOs and industry. The fora look into various aspects that will avoid duplication and promote excellent multidisciplinary research and innovation in the province.

The vision and mission of the Research and Innovation Directorate of the University of Venda are guided by the new Higher Education Act (Act 101 of 1997) which identifies research as one of the core functions of any tertiary institution.

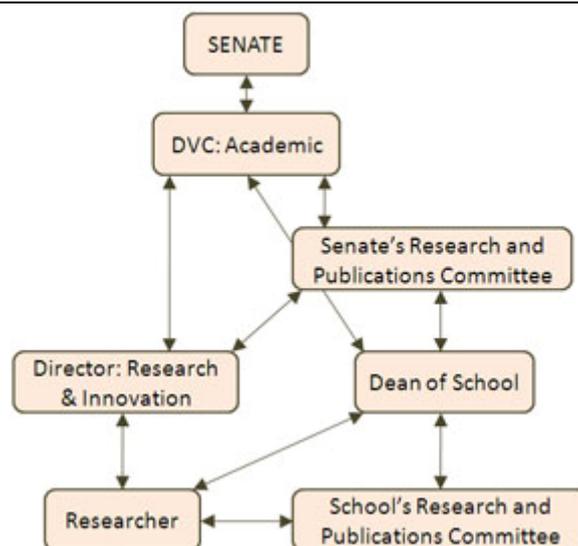
The **Vision** is “**Elevating basic and applied research to excellence at the University of Venda**”.

Our **Mission** is to be the engine that drives critical, innovative and relevant research for the pursuit of knowledge and for development of local, national and regional communities.

This articulation of our vision and mission enables us to stress:

- The importance of both basic and applied research at the university;
- The importance of knowledge and development of local, national and regional communities through collaborative research.
- The need to develop future researchers through emphasizing research and innovation at Postgraduate level.

The overall management and promotion of research at the University of Venda is the responsibility of the Deputy Vice-Chancellor Academic . He or she discharges this responsibility through the Director of Research and Innovation, the school Deans and the Research and Publication Committee, which is a committee of Senate.



Structure of the Research and Innovation Department Management

Notes on the Structure: Membership of Committees

Senate's Research and Publications Committee

- Deputy Vice Chancellor Academic: Chairperson
- Deputy Registrar
- Director of Research and Innovation
- Director of Library Services
- Deans
- One Representative per school at the level of Senior Lecturer or Professor

School's Research and Publications Committee

- Dean (Convenor)
- Two Representatives of the School Executive Board
- Two Senior Lecturers
- Two Professors
- One Lecturer
- One Junior lecturer

The current administrative structure of the Research and Innovation Directorate is as follows The Director reports to the DVC Academic and is supported by the Research Administrator and Executive Secretary. The Directorate of Research and Innovation is responsible for the administrative function for all research related matters: capacity building, research output, collaboration /partnerships and resource mobilization.

In order to facilitate support and ensure a quality standard in research the Directorate is supported by the following Committees:

- University Research and Publications Committee (RPC)
- School Research and Publications Committees
- School Higher Degrees Committees
- Community Engagement Committee
- Centre for Rural development and Poverty Alleviation

The Directorate is a unit within the Academic division along with community engagement directorate, Library services, Schools and Center for Higher Education Teaching and Learning. This arrangement facilitates coherence in the implementation of the core business of the University.

Furthermore, the director is a member of all Senate committees. The directorate is responsible for the implementation of research and innovation policy, for resource allocation and to assist and support researchers

with external resource mobilization. The Director is responsible for strategic issues such as focusing more on policy and advocacy, interact with high level policy makers and government officials /stakeholders, be ambassador and stimulate information flow between Univen researchers and research partners and funders (provincially, nationally and internationally). The administrative structure for the directorate will be strengthened to fulfill functions for postgraduate research support, project writing technical expertise for various organizations, research linkages and provision of information, and other support that researchers need.

The University of Venda in 2007 identified the main research focus area as “**Poverty Alleviation and Sustainable Rural Development**”. From its outset Univen has focused on serving the rural community and SADC region. It has broadened its activity by adopting a broad strategy and new niche areas listed below:

- “Developing and Managing Farming and Agro forestry System for Improved Livelihood and Food Security in Rural Communities”.
- “Integrated Environmental Management, Settlement and Energy for Sustainable Development”.
- “Combating Poverty and Illiteracy and Promotion of Gender Equality and Socio Economic Rights”.
- “Indigenous Knowledge System”.
- “Socio-Economic and Health Related Aspects of HIV and AIDS”.
- “Water Research for Improved Quality of Life.”
- “Investigating Maternal, Child, Youth and Women Health, Investing in Youth and Reversing the Trends.”
- “Entrepreneurship, Micro-finance, Innovation and Management of Human, financial and Heritage Resources to Bridge the gap between the First and Second Economy in South Africa”

Any additional supporting quantitative data:

4. What was the situation with respect to physical and ICT infrastructure within your relevant field of activity in your African partner institutions at baseline (September 2009)? Where any additional facilities based within Northern partner institutions regularly used by African partner institutions at baseline?

ICT infrastructure – the university is busy setting up specific IT centres for students to use. The network has also been upgraded and students have access to the use.

Some of the departments who are or could potentially become involved in this project has problems with infrastructure especially staff offices and equipment for conducting research. However, the university is busy building new buildings and the space problem will be solved by middle of 2011. The main problem is equipment and trained laboratory staff to use the equipment. Many of the presently appointed lab technicians are not skilled for the job.

Any additional supporting quantitative data:

PART B: Publication and grants situation

Please provide the following as additional annexes to this report:

- **A list of co-applicants' publications (for the last 10 years). Data should relate to both African and Northern institutions.**

Chapters in books:

Ehlers MM, Sundram A, Kock MM and **Potgieter N** (2007). Microbial and chemical assays to determine the origin of faecal pollution and the presence of waterborne pathogens. Chapter 4: In: Environmental Microbiology Research Trends. Nova Science Publishers, Inc. New York. ISBN: 978-1-60021-939-9. Pp.137-166.

Scientific reports:

Grabow WOK, Taylor MB, Viviers JC, **Potgieter N** and Gaobepe MG. The health impact of waterborne viruses and methods of control in high risk communities. WRC report 743/1/02 (2002).

Obi CL, **Potgieter N** and Bessong PO. Incidence of enteric pathogens in domestic water, water sources and stools of residents of urban and rural areas in the Venda region of the Limpopo Province. WRC Report 1126/1/03 (2005).

Venter SN, **Potgieter N** and De Wet CME. Origin, fate and clinical relevance of water-borne pathogens present in surface waters (*Salmonellae spp*, *Cryptosporidium* and *Vibrio cholerae*. WRC Report K5/1398 (2005).

Fouche PO, Foord SH, **Potgieter N**, Van der Walt BCW and Van Ree T. Towards an understanding of factors affecting the biotic integrity of rivers in the Limpopo Province: Niche partitioning, habitat preference and microbiological status in rheophilic biotopes of the Levuvhu and Mutale Rivers. WRC Report 1197/1/05 (2005)

Potgieter N. Impacts of the provision of water, sanitation, hygiene and home-based care services to HIV and AIDS infected people. WRC Report KV 209/08 (2008).

Du Preez M, Stewart AC, **Potgieter N** and Venter F. The use of AFLP to determine the specific origin of enterococci in drinking water in rural households. WRC Report 1602/1/08 (2008)

Potgieter N, Jagals P and Koekemoer R. The adequacy of water, sanitation and hygiene services in relation to home-based care services for HIV/AIDS infected individuals in rural and urban communities in South Africa. WHO Report (2007)

Peer reviewed journal articles:

Obi CL, **Potgieter N**, Randima LP, Mavhungu NJ, Musie E, Bessong PO, Mabogo DEN and Mashimbye J. Antibacterial activities of five plants against some medically significant human bacteria. SA J Sci 2001;98:25-8.

Obi CL, **Potgieter N**, Bessong PO and Matsuang G. Assessment of the microbiological quality of river water sources in rural Venda communities in South Africa. Water SA 2002;28:287 - 291.

Obi CL, **Potgieter N**, Bessong PO and Matsuang G. Scope of potential bacterial agents of diarrhoea and microbial assessment of quality of river water sources in rural Venda communities in South Africa. *Wat Sci Tech* 2003;47:59 - 64.

AD Steele, I Peenze, MC De Beer, CT Pager, J Yeats, **N Potgieter**, U Ramsaroop, NA Page, JO Mitchell, A Geyer, P Bos and JJ Alexander. Anticipating rotavirus vaccines: epidemiology and surveillance of rotavirus in South Africa. *Vaccine* 2003;21:354–60.

Obi CL, **Potgieter N**, Bessong PO, Masebe T and Molobela P. In-vitro antibacterial activity of Venda medicinal plants. *SA J Bot* 2003;69:1–5.

Obi CL, **Potgieter N**, Bessong PO, Igumbor EO and Green E. Prevalence of pathogenic bacteria and rotaviruses in stools of patients presenting with diarrhoea from rural communities in Venda, South Africa. *SA J Sci* 2003; 99: 589-592.

Steele AD, Ivanoff B, Armah G, Andu R, Esona M, Mbida A, Mwenda J, Muyanga J, Nimzing L, Nyangao J, Pennap G, **Potgieter N**, Ramsaroop U, Sawadogo S, Sebunya T, Trabelsi A, Tswana AS, Yeats J. Rotavirus strains circulating in Africa during 1996-1999: emergence of G9 strains and P [6] strains. *Vaccine* 2003; 21: 361-367.

Obi CL, Green E, Bessong PO, De Villiers B, Hoosen AA, Igumbor EO and **Potgieter N**. Gene encoding virulence markers among *E. coli* isolates from diarrhoic stool samples and river water sources in rural Venda communities of South Africa. *Water SA* 2004; 30(1):37-42.

Obi CL, Bessong PO, Momba MM, **Potgieter N** and Igumbor EO. Profiles of antibiotic susceptibilities of water isolates and physico-chemical quality of water supply in rural Venda communities. *Water SA* 2004; 30 (4): 515-519.

Wright JA, Gundry SW, Genthe B, Du Preez M, Moyo S, **Potgieter N** and Ndamba J. Use of handheld computers for collecting water quality data in developing countries. *Water International* 2004; 29 (4): 517-522.

Potgieter N, Obi Cl, Bessong PO, Igumbor EO, Samie A and Nengobela R. Bacteriological contamination of vhuswa, a local weaning food, and stored drinking water in impoverished households in the Venda region of South Africa. *J Health, Pop Nutr* 2005; 23 (2): 150-155.

Gundry SW, Wright JA, Gundry SW, Conroy R, Du Preez M, Genthe B, Moyo S, Mutisi C, Ndamba J (deceased) and **Potgieter N**. Contamination of drinking water between source and point-of-use in rural households of South Africa and Zimbabwe: implications for monitoring the Millennium Development Goal for water. *Water, Practice and Technology* 2006; 1 (2): 1-9.

Wright JA, Gundry SW, Conroy R, Wood D, Du Preez M, Ferro-Luzzi A, Genthe B, Kirimi M, Moyo S, Mutisi C, Ndamba J (deceased) and **Potgieter N**. Defining diarrhoea episodes: results from a 3-country study in sub-Saharan Africa. *J Health, Pop Nutr* 2006; 24 (1): 18-16.

Potgieter N, Mudau LS and Maluleke FRS. The microbiological quality of ground water sources used by rural communities in the Limpopo Province, South Africa. *Water, Science and Technology* 2006; 54 (11): 371-377.

Potgieter N, Koekemoer and Jagals P. A pilot assessment of water, sanitation, hygiene and homebased care services for people living with HIV/AIDS in rural and peri-urban communities in South Africa. *Water, Science and Technology* 2007; 56 (5): 125-131.

Du Preez M, le Roux W, **Potgieter N** and Venter SN. The genetic relatedness of *E. coli* associated with post-collection drinking water contamination in rural households. *Water SA* 2008; 34(1):107-111

Du Preez M, Conroy RM, Wright JA, Moyo S, **Potgieter N** and Gundry SW. The use of ceramic water filtration in the prevention of diarrhoeal disease: a controlled trial in rural South Africa and Zimbabwe. *American Journal of Tropical Medicine and Health* 2008; 79(5): 696-701

Wright J, Gundry SW, Conroy R, Du Preez M, Genthe B, Moyo S and **Potgieter N**. Child dysentery in the Limpopo Valley: a cohort study of water, sanitation, and hygiene risk factors. *Journal of Water and Health* 2009; 7(2):259-66.

Potgieter N, Becker PJ and Ehlers MM. Evaluation of the CDC safe water-storage intervention to improve the microbiological quality of point-of-use drinking water in rural communities in South Africa. *Water SA* 2009; 35(4):1-12

Omar KB, **Potgieter N** and Barnard TG. Development of a rapid screening method for the detection of pathogenic *Escherichia coli* using a combination of Colilert Quanti-Trays/2000 and PCR. *Water Science and Technology* 2010; 10(1):7-13

Keshav V, **Potgieter N** and Barnard TG. Detection of *Vibrio cholerae* O1 in animal stools collected in rural areas of the Limpopo Province. *Water SA* 2010; 36(2): 167-171.

Mieta SIK, **Potgieter N**, Sobsey MD and Barnard TG. Optimisation of methods for the collection and detection of bacterial pathogens from diarrhoeal human faecal samples using a novel stool collection kit. *Water SA* 2010; 36(2): 159-166.

Ntema, VM, **Potgieter N**, Barnard, TG. Detection of *Vibrio cholerae* and *Vibrio parahaemolyticus* by molecular and culture based methods from source water to household container-stored water at the point-of-use in South African rural communities. 2010. *Water Science and Technology* 61(12):3091-3101.

Potgieter N, De Beer M, Taylor MB and Steele AD. The prevalence and diversity of rotavirus strains in children with acute diarrhoea from rural communities in the Limpopo Province, South Africa. *J Infectious Diseases* 2010; Sep 1(202) Suppl:S148-155

Page N, Esona M, Armah G, Nyangao J, Mwenda J, Sebunya T, Basu G, Pyndiah N, **Potgieter N**, Geyer A and Steele AD. Emergence and Characterization of Serotype G9 Rotavirus Strains from across the African Continent. *J Infectious Diseases* 2010; Sep 1(202) Suppl:S55-63

- **A list of co-applicants' grants (if possible for the last 10 years, minimum requirement is 5 years). Data should relate to both African and Northern institutions.**

Water Research Commission (WRC):

- 2002/2003: Incidence of enteric pathogens in domestic water, water sources and stools of residents of urban and rural areas in the Venda region of the Northern Province (Project co-leader: R350 000-00).
- 2003/2004: Origin, fate and clinical relevance of three water-borne pathogens present in surface waters (*Salmonellae* spp, *Cryptosporidium* and *Vibrio cholerae* (Principle researcher at University of Venda: R400 000-00).
- 2005/2006: Determination of the specific origin of contaminating bacteria in drinking water of rural households by elucidating the contamination pathway using amplified fragment length polymorphism (AFLP) (Principle researcher at University of Venda: R300 000-00).
- 2006/2008: Improving health-related microbiological quality of drinking water at the point of use by selected home treatment interventions: effects on rural people living with HIV/AIDS. (Project leader: R800 000-00)

- 2007/2009: Management of Microbial Waterborne Diseases: Volume 5 Guideline Document: What our children need to know. (Project leader: R400 000-00)
- 2007/2009: How does the HIV/AIDS epidemic in South Africa impact on the water, sanitation and hygiene sectors? (Project team member: R700 000-00)

National Research Foundation (NRF) – THUTHUKA PROGRAMME

- 2005: Prevalence of enteric viruses in ground water used for crop irrigation in rural areas (R280 000-00)
- 2006: Prevalence of enteric viruses in surface and ground water used for crop irrigation in rural areas (R350 000-00)
- 2007: Prevalence of zoonotic viruses, bacteria and parasites in environmental, food and clinical samples in low socio-economic communities of the Limpopo Province of South Africa (R410 000-00)
- 2008: Prevalence of zoonotic viruses, bacteria and parasites in environmental, food and clinical samples in low socio-economic communities of the Limpopo Province of South Africa (R450 000-00)
- 2009: Prevalence of zoonotic viruses, bacteria and parasites in environmental, food and clinical samples in low socio-economic communities of the Limpopo Province of South Africa (R380 000-00)
- 2010: Prevalence of zoonotic viruses, bacteria and parasites in environmental, food and clinical samples in low socio-economic communities of the Limpopo Province of South Africa (R475 000-00)

National Research Foundation (NRF) – IRDP PROGRAMME

- 2003: Water storage in rural households: Intervention strategies to prevent waterborne diseases
- 2007: Biodiversity and water quality monitoring (Niche area leader: R128 000-00)

Department of Health (DOH) and Medical Research Commission (MRC)

- 2007/2008: Home/community based care: Assessment of water, sanitation and hygiene services in relation to home/community based care services for HIV/AIDS infected individuals in rural and peri-urban areas of South Africa. (Project leader: R1 670 000-00)

University of Venda Internal Research Grants

- 2005/2006: The prevalence and diversity of rotavirus strains in children with acute diarrhoea from rural communities in the Limpopo Province, South Africa. (Project leader: R150 000-00)
- 2007/2008: The prevalence and diversity of pathogenic strains of Escherichia coli in water and food sources in rural communities in the Limpopo Province, South Africa. (Project leader: R50 000-00)
- 2008/2009: The prevalence Escherichia coli O157:H7 in environmental and clinical specimens in rural communities in the Limpopo Province, South Africa. (Project leader: R100 000-00)
- 2009/2010: Contamination pathways in rural households: The use of pathogenic Escherichia coli strains to determine the health risks. (Project leader: R100 000-00)