

Centre for Water Resources Research

University of KwaZulu-Natal

Postdoctoral Researcher

Pietermaritzburg Campus

Duration: 18 months (starting August/September 2020 subject to finalisation of contracting and funding through the IHE Delft)

The Centre for Water Resources Research (CWRR) would like to appoint a full-time postdoctoral researcher to assist on a collaborative project between the University of KwaZulu-Natal and IHE Delft, titled:

“DUPC2 Grant Allocation to Water Accounting + Phase II 2020-2022”

Project Description:

DUPC2 Water Accounting Plus - Phase I focussed on the development of the Water Accounting Plus (WA+) framework and associated support tools. Phase II of this initiative includes the following objectives:

- to increase uptake of WA+ results to inform decision making,
- to improve accuracy of WA+ outputs and understanding of uncertainties, and
- to promote education, capacity development and dissemination of the WA+ framework and tools.

In applying the WA+ framework, the aim is to utilize remote sensing products and globally available datasets to derive relevant spatial and temporal information about the status of water resources to support decision making for river basin management. However, hydrological modelling is often required to provide estimates of WA+ accounting sheet outputs that cannot be easily measured at the scale of interest, typically catchments and large basins. In this project selected hydrological models (SWAT, ACRU and WEAP) will be applied in selected catchments across Africa for the purpose of compiling WA+ water accounts. These accounts will be compared with accounts compiled using a water balance model under development by IHE Delft as one of the tools to support application of the WA+ framework.

Centre for Water Resources Research

Postal Address: University of KwaZulu-Natal, Private Bag X01, Scottsville, 3209, Pietermaritzburg

Telephone: +27 (0)33 260 5678 **Facsimile:** +27 (0)33 260 5818 **Email:** cwrr@ukzn.ac.za **Website:** cwrr.ukzn.ac.za

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville



Job Description:

The postdoctoral researcher will be required to act as the principal investigator on the South African subcomponent of a project funded by DUPC2, the IHE Delft Partnership Programme for Water and Development. The postdoctoral researcher will be responsible for carrying out the research in the following work packages under the guidance of Dr Clark, who will be leading the CWRR subcomponent of the project:

- **Work Package 1:**
 - Review of water accounting in river basin planning processes in the Inkomati River Basin, including stakeholder analysis for the South African portion of the Inkomati.
- **Work Package 2:**
 - Collaboration on IHE Water Balance Model development and validation in the Inkomati River Basin.
 - Further development of the Hydroloop tool by comparing water accounts generated using Hydroloop (IHE Water Balance Model) with water accounts generated using the ACRU model in the Inkomati Catchment.
- **Work Package 3:**
 - Conduct training workshop for local partners.
 - Report on outcomes at WA+ symposium.

In addition the postdoctoral researcher will be required to provide ad-hoc assistance to Dr Clark on related projects.

Skills Required:

- Hydrological modelling skills (preferably the ACRU model)
- GIS competency
- Remote sensing (multispectral image analysis) competency
- Computer programming/scripting skills for data processing and analysis
- Good people skills (stakeholder engagement)
- Organization/co-ordination skills
- Excellent written and verbal communication skills in English
- A valid driver's license

Conditions of position:

- Applicant must be a South African citizen or permanent resident, or have an existing visa that extends to the end of the contract period
- Applicants must have a PhD
- No benefits or allowances are included in the stipend, but it is tax exempt
- The successful applicant will be required to register as a postdoctoral researcher at UKZN
- The successful applicant will be required to comply with UKZN's approved policies, procedures and practices for the postdoctoral sector
- The successful applicant should ideally be based at the CWRR in Pietermaritzburg for the entire 18 month period
- The successful applicant should be able to travel to the Incomati Catchment as required

Centre for Water Resources Research

Postal Address: University of KwaZulu-Natal, Private Bag X01, Scottsville, 3209, Pietermaritzburg
Telephone: +27 (0)33 260 5678 Facsimile: +27 (0)33 260 5818 Email: cwrr@ukzn.ac.za Website: cwrr.ukzn.ac.za

Value and tenure:

The value of the fellowship is between ZAR 18 750 to ZAR 25 000 per month for full-time work and is tenable for 18 months, depending on experience and qualifications, on condition of satisfactory meeting of deliverables.

Application requirements:

Applicants should submit (i) an application letter that includes a short description of their expertise and research interests, and how these relate to the position, (ii) a CV including a publication list, (iii) copies of the most recent academic transcripts and/or certificates, and (iv) email addresses of at least two references who been directly involved in their masters, PhD and/or previous postdoctoral research. Applications should be emailed to: clarkd@ukzn.ac.za before 24 July 2020.

Selection process:

- Only eligible and complete applications will be considered.
- Interviews will likely take place in early August 2020 and the successful candidate is expected to start as soon as possible thereafter.
- We reserve the right not to appoint anyone to this position: the appointment will be subject to the project grant money being awarded.

Closing date:

Applications must be received by the CWRR on or before 24 July 2020. We will re-advertise thereafter if the position has not been filled.

Contact details for enquiries about the research topic and submission of applications:

- Dr. David Clark
Email: clarkd@ukzn.ac.za

Centre for Water Resources Research

Postal Address: University of KwaZulu-Natal, Private Bag X01, Scottsville, 3209, Pietermaritzburg

Telephone: +27 (0)33 260 5678 **Facsimile:** +27 (0)33 260 5818 **Email:** cwrr@ukzn.ac.za **Website:** cwrr.ukzn.ac.za

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville