

BUKHOSI NGQABUTHO KHUMALO

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Date of Birth: 22-September-1993

Sex: Male

Place of Birth: Lupane

Citizenship: Zimbabwean

Date of Availability: 01 July 2023

Driver's License: Class 4 (Light Vehicles)

POST-SECONDARY EDUCATION

- **MSc Cartography and Geo-Informatics, Perm State University, Russia** ([Link](#)) 2020-2022

Thesis: "Modelling of water erosion risk of Umzingwane Catchment Area for Integrated Water Resources Management"

Final grade: First class (5)

Top 5%

- **BSc Geography and Population Studies, Lupane State University** ([Link](#)) 2014-2018

Thesis: "A time series modelling of soil loss using the Revised Universal Soil Loss Equation (RUSLE) in the Shake River Catchment, Gwanda District, Zimbabwe"

Final grade: First class (1)

Top student

RELEVANT WORK EXPERIENCE

Dabane Trust

18 January 2023- Present

Monitoring and Evaluation, Data Processing and Communication Officer: My major roles include the design and management of Dabane Cadastre (Interactive Web Map), Spatial Database creation and Management using PostgreSQL, PowerBI dashboards design and management, Development of story maps, Development of map animations using PowerPoint and Adobe premiere, preparation of narrative reports to management and donors (monthly, quarterly, annual reports), preparation of log frames, community survey data, evaluation data and development of work plans, Analysis of survey data and mentoring and supervision of interns. I am also involved in landuse/landcover mapping, soil erosion modelling.

Achievements so far include:

- ☑ Development of Dabane Interactive Web Map found at dabane.org
- ☑ Development of dynamic, near- real time and interactive Power BI dashboards
- ☑ Development of USAID Resilient Waters funded project training manuals on Climate Smart Agriculture and Sustainable Rangeland Management for using Adobe InDesign
- ☑ Development of USAID Resilient Waters Digital brochures (30), manuals and poster messages (20) using Adobe Illustrator
- ☑ Leading a Dabane- Help Germany Rapid needs assessment and compilation of the final needs assessment report for a USAID Funded Emergency Food Security project proposal

- ☑ Completion of a USAID funded Emergency Food Security project proposal
- ☑ Soil erosion modelling and land use/ landcover mapping for projects baseline technical assessments

Lupane State University, Zimbabwe

29 September 2022- Present

Part time Lecturer: I am effectively teaching courses such as Principles of GIS, Research Methods, Climatology and Meteorology, Introduction to GIS and Remote Sensing, Environmental Impact Assessment and Land degradation and reclamation. I have also supervised over 7 undergraduate GIS and Remote sensing research projects.

Perm State University GIS Center, Russia ([Link](#))

January- April 2022

Intern: As an intern at the PSU GIS Center I worked on a random forest model to predict forest cover disturbances using a Google Earth Engine Python API (Geemap). I gained skills such as machine learning, Python programming, Google Earth Engine, R and Statistica

Dabane Water Workshops, Zimbabwe ([Link](#))

Aug 2016-Jul 2017

Geographic Information Systems intern: I managed spatial databases, conducted soil erosion modelling, performed spatial data analysis using Arcmap and QGIS, monthly Vegetation monitoring, developed environmental management plans, conducted social and technical surveys, facilitated community trainings on climate change, gender and environmental conservation works, worked with geography clubs in schools and wrote activity, monthly and annual reports.

Ministry of Primary and Secondary Education, Lupane, Zimbabwe

Jan -Aug 2014

I effectively taught grade 7 and grade 4 classes at Gegema and Jotsholo Primary schools respectively.

PROJECTS

Integrated Water Resources Management and Climate Smart Agriculture

Dabane Trust

(2023)

The project seeks to increase the resilience to climate change through IWRM in Southern Africa, in Matobo District, Zimbabwe. It is funded by Action for World Solidarity and my role includes:

- Management of spatial data using PostgreSQL and PostGIS
- Creation of interactive dashboards for the project using PowerBI
- Development of the Terms of Reference for the End of Project External Evaluation.
- Report writing
- Designing

CES-RURAL

Dabane Trust

(2023)

The project is funded by IHE DELFT and DUPC and it aims at Local Community Empowerment through Sustainable Resource Use and Agricultural Value Chain Development in the Limpopo Basin. My role in the project includes:

- Mapping of gardens
- Management of information using PostGIS
- Creation of CES-RURAL Dashboards using PowerBI
- Documentation of stories of change

- Creation of video stories of change

Digital Integrated Water Resources Management

Dabane Trust (2023)

The project is funded by USAID through Resilient Waters and aims at using digital technologies to build resilience of communities through IWRM. My role in this project involves:

- Milestone report writing
- Development of IEC materials such as brochures, posters, information guides and IWRM manuals using Adobe Illustrator and Adobe InDesign.
- Creation of beneficiary and activity databases and dashboards using PowerBI.
- Documentation of community action plans
- Stakeholder Capacity Assessments

Amalima Loko Project

Dabane Trust (2023)

The is a 5 year project that is funded by USAID through CNFA. My role in this project involved the creation of video map animations using QGIS and Adobe premiere. I have also been involved in degraded areas assessment and mapping and also designing environmental conservation works

Resilience to the Effects of Climate Change through Integrated Water Resources Management in Southern Zimbabwe

Dabane Trust (2016-2017)

Responsible for:

- GIS and Remote sensing data management and analysis
- Data collection and Analysis, Social feasibility surveys, Technical feasibility surveys and mid-term reviews.
- Soil, Vegetation and Weather condition monitoring.
- Coordinating and networking with other partners, district stakeholders and local leaders.
- Work plans, Monthly , Quarterly and Annual reports
- Environmental conservation works- (gulley reclamation, Contours)
- Developing Environmental Management Plans for Dams.
- Involved in the installation of pumps, solar and tanks.
- Facilitating trainings and workshops

Sustainable Energy for Rural Communities (SE4RC)

Dabane Trust (2017)

Involved in:

- Irrigation infield works assessments.
- Water supply resuscitation and installations
- Field visits and feasibility surveys

Amalima Project (USAID – Funded - (2014-2016)

Dabane Trust (2017)

Involved in:

- Cleaning and management of GIS Data (Clinics and Boreholes).
- Map creation.

TROICARE- Women Seed and Nutrition Project

Dabane Trust (2017)

Involved in:

- Conducting surveys, data collection
- Map creation

Access to Natural Resources and Women Empowerment **Dabane Trust** (March 2017)

Responsible for:

- Baseline survey - data collection.
- Creation of baseline survey maps.

RESEARCH EXPERIENCE & INTERESTS

I have an undergraduate and post graduate research experience in soil erosion modelling using empirical models and geospatial technologies. My current research interest include the use of machine learning models for biodiversity monitoring, climate change impact modelling and prediction of dangerous hydro meteorological hazards.

PERSONAL SKILLS.

I possess excellent organizational, communication, teaching, and ethical decision-making skills. Able to establish and maintain effective working relationships with colleagues and stakeholders. I'm able to exercise the judgment, determination, and creativity necessary in situations involving the achievement of measurable goals.

ICT SKILLS

Map design (Map Info, ArcMap, QGIS, R) ,Spatial database management (POSTGRESQL), Spatial Data Analysis (ArcMap, QGIS, Python, R, Arcpy, ENVI, Easy Trace, SAGA GIS), Cloud computing (Google Earth Engine), GIS Web development (Geoserver, GitHub, Open Layers, HTML, JAVA and CSS), Graphic designing (Photoshop, Illustrator, InDesign, Davinci Resolve), Microsoft office, Statistical analysis (SPSS, Stat Graphics, Statistica), mobile data collection (Mergin Maps, Kobo, ODK, GeoODK, Q-Field, Geo UTM Mapper), Dashboards (ESRI, Tableau, PowerBI), Machine Learning

HONORS AND AWARDS

- Degree Diploma of second place at the 3rd International Conference of final qualification works. 2022
- Russian Red Diploma after attaining 100% distinctions in MSc Cartography and Geoinformatics 2022
- Department of Cartography and Geo-informatics hall of fame for distinct achievements 2021
- Best graduating student in Geography and Population Studies , Lupane State University 2018
- Two university book prizes, Lupane State University 2018
- Vice Chancellors Price, Lupane State University 2018
- Better Schools Program Zimbabwe (BSPZ) Award 2014

LANGUAGES

Fluent in English, Mother Language: Ndebele and other languages include Russian and Shona.

INTERESTS AND HOBBIES

Networking, YouTubing, Researching, Teaching, public speaking, rural soccer development

MEDIA COVERAGE

05-05-2019 Sunday News- Lupane based soccer academy grows. ([Link](#))
10-05-2019 B-Metro – Lupane Junior teams soccer gala ([Link](#))
15-10-2020 Community Podium- Boost for Lupane education group ([Link](#))

REFEREES

Lupane State University

Chairperson – Dept. of Geo and Geo-Information Science

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Perm State University

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Dabane Trust

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