



## Company Profile

Shango Solutions (Shango) was founded in April 2004 and is a leading geological consultancy company with 22 permanent employees and 14 sub-contractors. In addition, Shango has employed eight part-time graduates to assist with project activities. Consultancy activities include tenement maintenance in accordance with the guidelines provided by the Department of Mineral Resources and Energy (DMRE), target generation, management of drilling programmes, database establishment, geological modelling, Mineral Resource estimation and the completion of Competent Person reports.

Consultancy activities straddle the entire mining value chain from exploration to beneficiation (Figure 1), thereby providing the client with complete solutions. Activities are performed in multi-disciplinary teams. Areas of specialisation include target generation, exploration, geodatabase compilation and management, geological modelling, resource estimation, mineral asset valuations, due diligences, desktop project reviews and technical reporting. The company services the majority of the major mining houses, but also junior exploration companies, mineral resource investment firms, government institutions and departments and the artisanal and small-scale mining sectors. Shango Solutions collaborates closely with local and international experts in the mining and corporate industries. This, in conjunction with our affiliations with academic and parastatal institutions, ensures provision of the most innovative and appropriate solutions to clients.

Shango has completed in excess of 400 projects, of which the majority were located in Africa (Appendix 1). The company consequently has extensive ground-based mining related experience throughout Africa, especially southern, eastern and north-west African states. Our extensive knowledge of the African minerals industry has attracted some of the largest names in mineral extraction to our client base. The project portfolio highlights our cross-sectorial approach and capability.

Shango incorporates in excess of 500 years of Africa-based mining and exploration experience. This includes, but is not limited to, gold, platinum, rare earth elements, base metals, uranium, coal, natural gas, ferrochrome, aggregate, heavy mineral sands and diamonds. Over the last decades, we have established comprehensive 2D Geographic Information Systems (GIS) databases throughout Africa, which consider geological and geophysical data, mineral occurrences, defunct and existing mines, infrastructure and mining statistics.

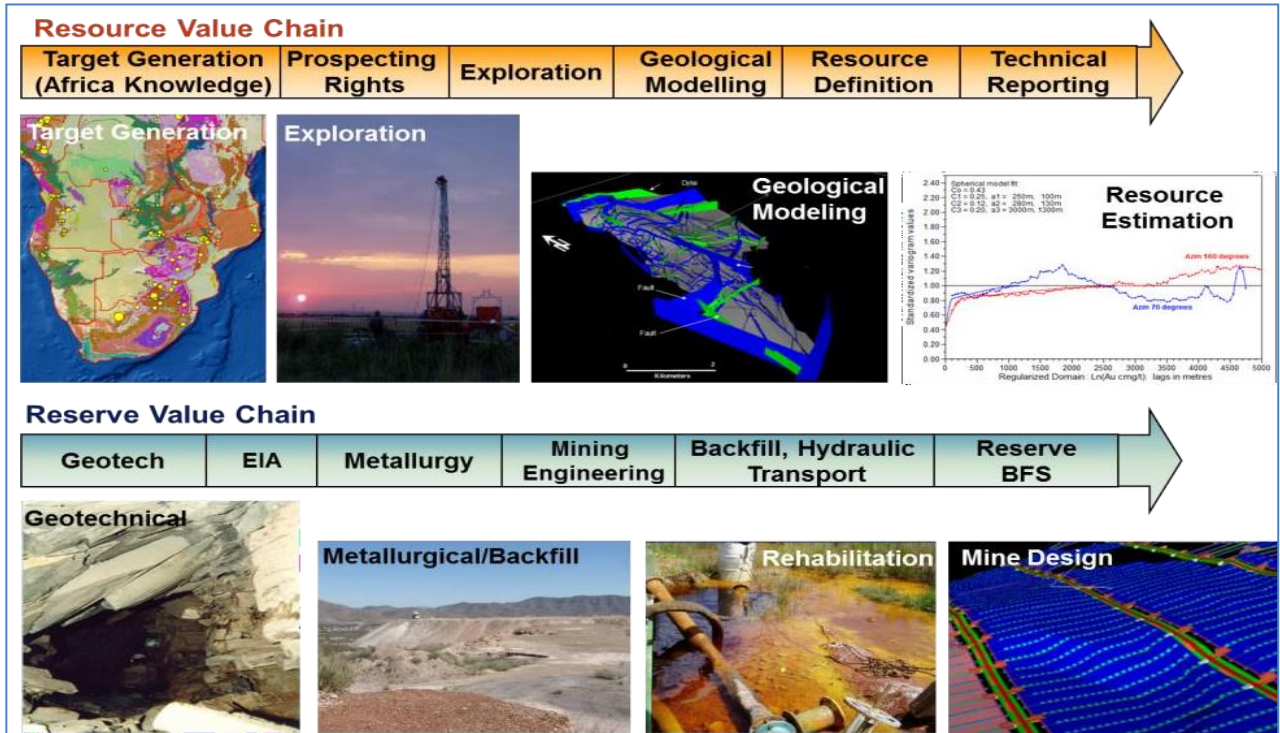


Figure 1: Resource and Reserve Value Chains.

Shango Solutions main attributes are as follows:

- Decades of mining expertise, from surface to deep level
- Established track record
- Management experience
- Aspiration to challenges
- Mult-commodity experience
- Striving towards technical excellence
- Established networks facilitating multi-disciplinary solutions
- Committed to transformation and sustainable development
- Customer focused

Shango has not performed formal marketing for the past eleven years due to technical excellence, relying primarily on word of mouth, our reputation in the industry and a strong network. The company adopts a mean and lean structure with no fulltime finance and human resources departments.



## **CURRICULUM VITAE**

### **NANGAMSO ZIZO SIWENDU**

#### **PERSONAL DATA**

Address: Shango Solutions  
H.H.K. House, Cnr Ethel Road and Ruth Crescent  
Northcliff, 2195

Telephone: +27 (0)11 678 6504 (work)  
+27 (0)72 669 6250

E-mail: zizo@shango.co.za

Fax: +27 (0)11 678 9731

Place of birth: Butterworth, Eastern Cape, South Africa

Marital Status: Single

#### **EDUCATION**

2002: Matriculated  
Victoria Girls' High School, Grahamstown

2003-2006: BA (Geography and Environmental Science)

2008-2009: B. Sc. (Hons) in Environmental Management

#### **AFFILIATIONS**

EAPASA Membership: 2022/4857 (Candidate EAP)



## **COURSES AND WORKSHOPS ATTENDED**

2017:	Certificate in Communication and Presentation Skills, Gauteng
2017:	Certificate in Advanced Report Writing, Gauteng
2018:	Department of Mineral Resources NEMA Environmental Authorisation Application Process Workshop, Free State
2019:	Mine Closure and Rehabilitation Conference, Gauteng
2022:	Certificate in Innovation and Creative Thinking

## **EMPLOYMENT HISTORY**

October 2016 - Present	Shango Solutions Principal Environmental Consultant
November 2010 - October 2016	Environmental Impact Management Services (Pty) Ltd Environmental Consultant

## **TECHNICAL REPORTS**

### **Compliance and Enforcement Strategy**

- Development of the City of Johannesburg Waste By-Laws Compliance and Enforcement Strategy, Gauteng Province, 2015

### **Public Involvement Processes**

- Public Participation Process for Mashala Coal EIA, Waste Management and Water Use License, Mpumalanga Province, 2013
- Public Participation for PHBagale Mining Right (re-submission), Gauteng Province, 2013
- Public Participation Process for Umsinde Wind Energy Facility and associated Grid Connection EIA, Western Cape and Northern Cape Provinces, 2014



- Public Participation Process for Komsberg Wind Energy Facility and associated Grid Connection EIA, Western Cape and Northern Cape Provinces, 2015

### **Environmental Auditing**

- Development and Implementation of the ISO 14000 Environmental Management System for Eskom Primary Energy Division, Gauteng Province, 2010
- Eskom Medupi Power Station Bi-annual Environmental Compliance Audits, Limpopo Province, 2011 – 2012
- Annual and Closure Environmental Audit Reports and Financial Provision Audit Reports for White Rivers Exploration Prospecting Tenements, from 2016 to date
- Annual Environmental Audit Report and Financial Audit Report for Mafuri Mining Construction (Pty) Ltd for the Schiel Alkaline Complex Prospecting Tenement, 2017
- Annual Environmental Audit Report and Financial Audit Report for West Wits Mining (Pty) Ltd for the Prospecting Right GP 10035 PR, 2017 and 2018
- Annual and Closure Environmental Audit Report Financial Audit Report For Bacarac Trading 104 (Pty) Ltd Prospecting Tenements, 2018 and 2019
- Annual Environmental Audit Report Financial Audit Report for Matsapa Trading 529 CC (Turner Prospecting Right), 2020 and 2021
- Final Performance Assessment Report, Environmental Risk Report And A Closure Plan For The Purpose Of Applying For A Closure Certificate for ERG (Bray Closure), 2023

### **Basic Assessment Processes**

- Basic Assessment for African Exploration, Mining and Finance Corporation (Pty) Ltd Prospecting Right, KwaZulu-Natal, 2011
- Basic Assessment for Eros Vuyani Towers within 32m of a Watercourse, KwaZulu-Natal, 2012
- Basic Assessments for Three 20ha Sites of 15mw Pv Developments, North-West, 2012
- Basic Assessment for the First National Bank Datacentre Upgrade in Randburg, Gauteng, 2015
- Basic Assessment for Atoll Metal Recovery (Pty) Ltd Prospecting Right, Gauteng, 2016
- Basic Assessment for Lothlorien Waste Paper Recycling Storage Facility, Gauteng, 2016
- Basic Assessment for Western Margin Gap West Prospecting Right, Free State, 2018



- Basic Assessment for Ventersburg Consolidated Prospecting Right, Free State, 2018
- Basic Assessment for Nkunzana Prospecting Right, KwaZulu-Natal, 2018
- Basic Assessment for Evander East 2 Prospecting Right, Mpumalanga, 2018
- Basic Assessment for Evander East 3 Prospecting Right, Mpumalanga, 2018
- Basic Assessment for Kroonstad South Prospecting Right, Free State, 2018
- Basic Assessment for Kroonstad North Prospecting Right, Free State, 2018
- Basic Assessment for Vredefort West Ext. Prospecting Right, 2018
- Basic Assessment for Palmietfontein Mining Permit, North West, 2018
- Basic Assessment for Bothaville NE Ext B Prospecting Right Section 102, Free State, 2020
- Basic Assessment for Kroonstad South Prospecting Right Section 102, Free State, 2021
- Basic Assessment for Pan African Resources (Pty) Ltd Barberton Mines Section 102, Mpumalanga, 2023

### **Environmental Impact Assessments**

- Environmental Impact Assessment for the Construction of Transnet Overvaal tunnel, Mpumalanga, 2013
- Environmental Impact Assessment for Tetra 4 Production Right, Free State, 2016
- Exploration Right for Sungu Sungu Gas (Pty) Ltd Exploration Right, KwaZulu-Natal and Free State, 2016
- Exploration Right for Motuoane Energy (Pty) Ltd Hennenman Exploration Right, Free State, 2016
- Environmental Impact Assessment for Monte Cristo Commercial Park (Pty) Ltd (MCCP) Mining Right, Free State, 2019
- Exploration Right for White Rivers Exploration (Pty) Ltd Kroonstad Gas, Free State, 2020

### **Water Use Licenses**

- Environmental Management Programme and Water Use Licenses for Kusile-Zeus to Kendal-Zeus 400kV Lines, Mpumalanga, 2012
- Matimba Power Station Integrated and Waste Management Plan and Water Use License Amendments, Limpopo, 2013



- MCCP Integrated And Waste Management Plan and Water Use License Free State, 2019

### **Section 24G Processes**

- Sterkfontein Poultry Section 24G Rectification, Gauteng, 2013
- Ferrous Metal Processors Section 24G Rectification, Gauteng, 2014

### **SKILLS**

- MS office package (word, PowerPoint and Excel)
- GIS
- Acrobat
- Google Earth
- Project Management
- Valid Driver's License



## EAPASA

Unit 19 Oxford Office  
Park3 Bauhinia Street  
Highveld Techno Park  
Centurion 0157  
Tel. (+27) 12 880 2154

## Environmental Assessment Practitioners Association of South Africa

*Advancing environmental assessment practice in South Africa*



Email: [registrar@eapasa.org](mailto:registrar@eapasa.org) / Website: [www.eapasa.org](http://www.eapasa.org)

Ms NANGAMSO ZIZO SIWENDU  
22 ETHEL AVENUE  
NORTHCLIFF  
JOHANNESBURG  
2195

Sent by email to: [zizo@shango.co.za](mailto:zizo@shango.co.za)

Dear Ms SIWENDU

**Registered Environmental Assessment Practitioner: Number 2022/4857  
NANGAMSO ZIZO SIWENDU: South African ID 8306040264080**

The Environmental Assessment Practitioners Association of South Africa (EAPASA) herewith certifies that NANGAMSO ZIZO SIWENDU is a Registered Environmental Assessment Practitioner (EAP) in accordance with the prescribed criteria of Regulation 15.(1) of the Section 24H Registration Authority Regulations (Regulation No. 849, Gazette No. 40154 of 22 July 2016, of the National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended).

Your registration is duly authorised by EAPASA as the single Registration Authority for EAPs in South Africa (appointed as per Regulation No. 104, Gazette No. 41434 of 8 February 2018, in terms of section 24H(3)(a) of the NEMA). Your status as a Registered EAP is displayed in the 'EAP Register' – please find your name and contact email address at

<https://registration.eapasa.org/registered-practitioners>

Your registration is effective for a period of five years from 26 September 2023, and expires on 26 September 2028. The renewal of your registration in 2028 will be contingent on you having met the requirements of EAPASA's Continuing Professional Development (CPD) policy during each year of registration.

As a Registered EAP you are required to uphold the EAPASA Code of Ethical Conduct and Practice in your professional endeavours, towards the goal of quality assurance in environmental assessment practice.

Please accept my congratulations on your registration.

Best regards

Dr Patrick Sithole

Registrar

Date: 26 September 2023





## CURRICULUM VITAE

### TSHILO MALANGE

#### PERSONAL DATA

Address: HHK House  
Cnr Ethel Ave and Ruth Crescent  
Northcliff

Telephone: +27 76 1938 759

E-mail: [tshililo@shango.co.za](mailto:tshililo@shango.co.za)

Fax: +27 11 678 9731

Date of birth: 23 January 1984

Place of birth: Nzhelele, Limpopo, South Africa

Marital Status: Single

#### EDUCATION

2003: Matriculated  
Patrick Ramaano High School

2008: BSc (Hons) Geology  
University of Venda

#### EMPLOYMENT HISTORY

September 2008 to present: Shango Solutions- Geologist



- DMR interaction, project application, prospect management reporting and administration
- Prospecting Applications/Mining Application/Mining Permit
- Management of reporting and Renewing Tenement Areas
- Creating Regulation Plan 2(2) plan for Prospecting/Mining Right Applications
- Digitizing data
- Georeferencing of maps
- Title Deeds Search
- Environmental Reports
- Field Mapping
- Geo-database Development
- Data Manipulation
- Data Conversion
- Data Processing
- Data Analysis
- ArcGIS Server
- Assisting with Web GIS Services
- Data Publishing for Web Viewing
- Data Capturing
- Digitizing underground mine plans relative to exploration projects
- Plotting survey pegs in relation to underground mine plans

## **SKILLS**

### **Software Experience:**

MS Office (Word, Excel, Access, PowerPoint, Outlook, One Note)  
ArcGIS  
Google Earth Pro  
Leapfrog

### **Mineral Tenure:**

Prospecting Right Application  
Mining Right Application  
Mining Permit Application  
Government Official Interaction



**Geology:**

Mapping  
Core Logging  
Leapfrog  
Geodatabase

**ArcGIS Suite:**

Proficient in developing GIS application ESRI: ArcGIS software 10.6  
ESRI: ArcGIS Desktop  
ESRI: ArcGIS Online  
ESRI: ArcGIS Enterprise  
ESRI: ArcEditor data creation ESRI: ArcMap  
ArcToolbox  
Excellent understanding of geographical analysis

**Professional Affiliations:**

Member of the Geological Society of South Africa (GSSA)