



**British  
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

# **An African perspective on aglime**

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# Outline

- **Geologist with the BGS**
- **Development research in Africa**
- **Zambian history from pre-colonial past to current democratic nation state**
- **Brief on aglime production in Zambia**
- **Aglime for small-scale farmers (FarmLime)**

# Southern Africa



# Zambia



# Zambian village



# History of Zambia

- **300BC – 400AD** : Bantu speakers migrate south
- **1500s onward** : Slave trade centred on Arab & Portuguese city states
- **1800s onward** : ‘Difaqane’ – forced migration from S Africa
- **Late 1800s** : Scramble for Africa
- **1900 onward** : British colony of Northern Rhodesia
- **1964** : Independence, Zambia born
- **1991** : Democratic multi-party state

# Empire

- Lilyvale Farm, Kabwe, Central Province
- Oldest existing aglime operation
- Coffee plantation with limestone & dolomite
- Open cast quarry
- Jaw crusher & hammer mill
- Production currently approx. 7000 tonnes pa

# Lilyvale Farm



# Lilyvale Farm



# Lilyvale Farm



# Wind of change

- Mindeco Small Mines Ltd, Lusaka
- Parastatal company
- Operating as 'custom milling' centre
- Jaw crush & ball / impact mill
- Production approx. 2 – 3000 tonnes pa

# Mindeco Small Mines Ltd



# Mindeco Small Mines Ltd



# King Copper

- Ndola Lime Ltd, Copperbelt Province
- Large burnt/ hydrated lime producer supplying copper industry
- Primary crushing, screening, calcination & hydration
- Agricultural lime is the dust from the crushing plant
- Sold cheaply, fine grained, low MgO

# Ndola Lime Ltd



# Ndola Lime Ltd



# Ndola Lime Ltd



# Private enterprise

- Uniturtle Industries (Z) Ltd, Lusaka
- Indian-owned business
- Diversified from gravestone & tiles into aglime
- Entirely family owned & operated
- Jaw crusher & vertical impact mill
- Production approx. 10 – 15,000 tonnes pa
- Main supplier for southern provinces

# Uniturtle Industries (Z) Ltd



# Uniturtle Industries (Z) Ltd



# Southern investment

- Hi-Qwalime Mining Ltd, Mkushi, Central Province
- South African backed operation
- Supplies commercial & small-scale farmers
- Open cast dolomite quarry
- Hammer mill & ball mill
- Production approx. 10-15,000 tonnes pa
- Recently acquired Lilyvale Farm



# Hi-Qwalime Mining Ltd



# Hi-Qwalime Mining Ltd



# Hi-Qwalime Mining Ltd



# Hi-Qwalime Mining Ltd



# Small-scale enterprise

- FRECA Mining & Manufacturing, Solwezi, North-Western Province
- Operation supplying small-scale farmers
- Dolomite extracted using fire & water
- Crushed by hand & sieved
- Production to date approx. 10 tonnes

# Small-scale production



# Small-scale production



# Small-scale production



# FarmLime

- **Small-scale farmers currently do not use aglime as expensive & unavailable**
- **Research into small-scale production from local resources**
- **Integrated project team involving geoscientists, engineers & agronomists**
- **Uptake important to increase food security & sustainable rural livelihoods**

# Conclusions

- **Agricultural lime is taken for granted in the developed world**
- **Aglime in Zambia is expensive & hard to source**
- **Existing operations are often inefficient & poorly maintained**
- **Improving the local availability of aglime is important for food security & livelihoods of rural communities**

.....and finally

