

Global Soil Partnership:  
Managing Living Soils Workshop  
5-7 December 2012  
FAO Headquarters, Rome, Italy

# Status and Priorities of Soil Management in South Africa

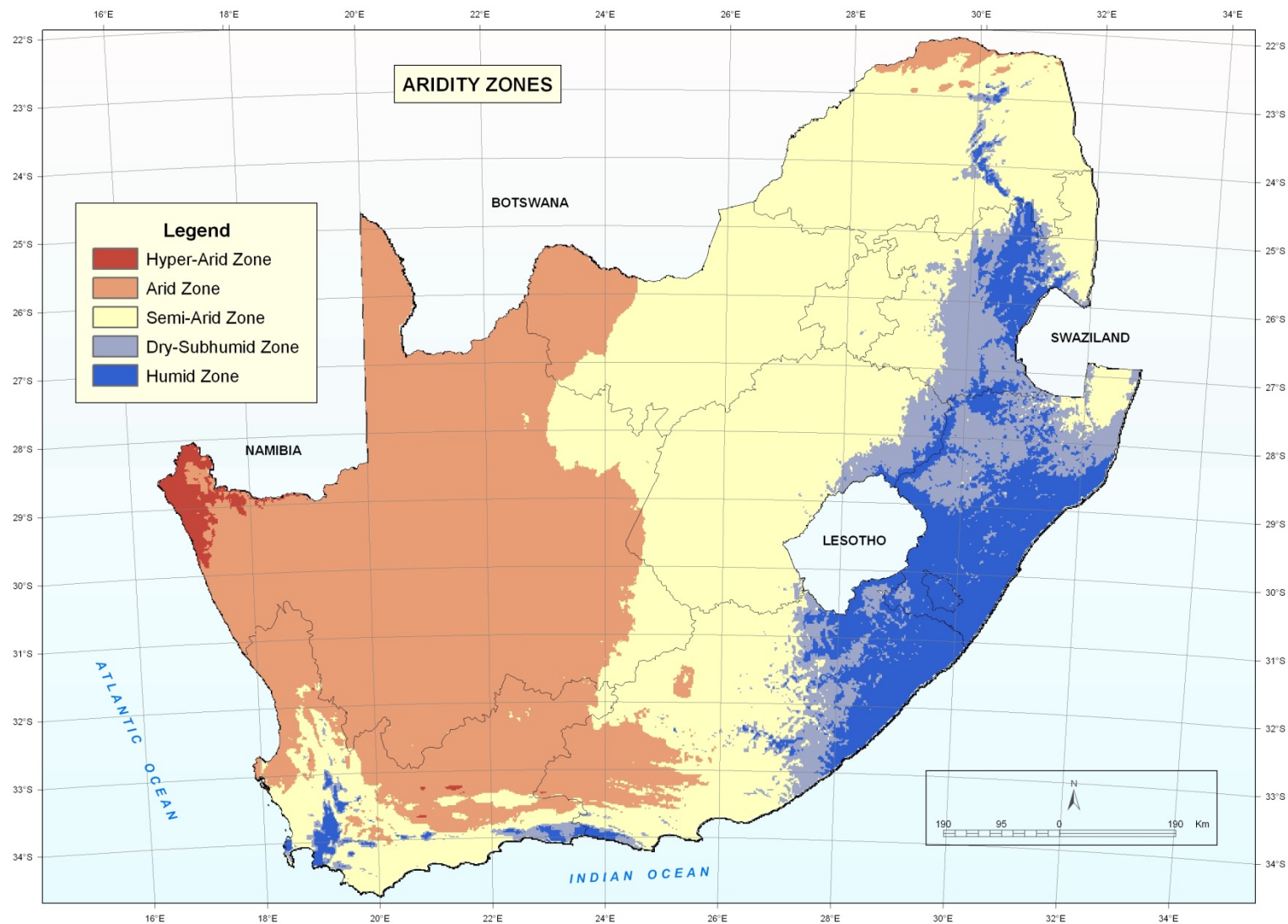
Liesl Wiese

6 December 2012





# SOUTH AFRICA

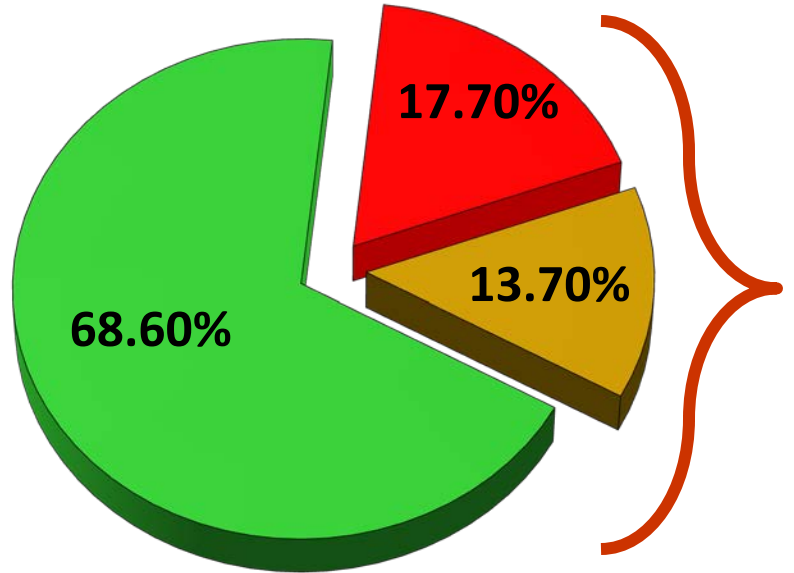


on

a)



# SOUTH AFRICA



- Potentially arable (16.8 mil ha)
- Grazing (83.9 mil ha)
- Non-agricultural use (21.6 mil ha)

- Diverse natural resources
- Limited potential for intensive agriculture
- Soils: Diverse, 81% slightly weathered
- 30% sandy soils
- **Dual agrarian structure**
  1. Commercial farmers
  2. Small scale farmers



# Communal/Subsistence



# Soil Degradation



# in SA



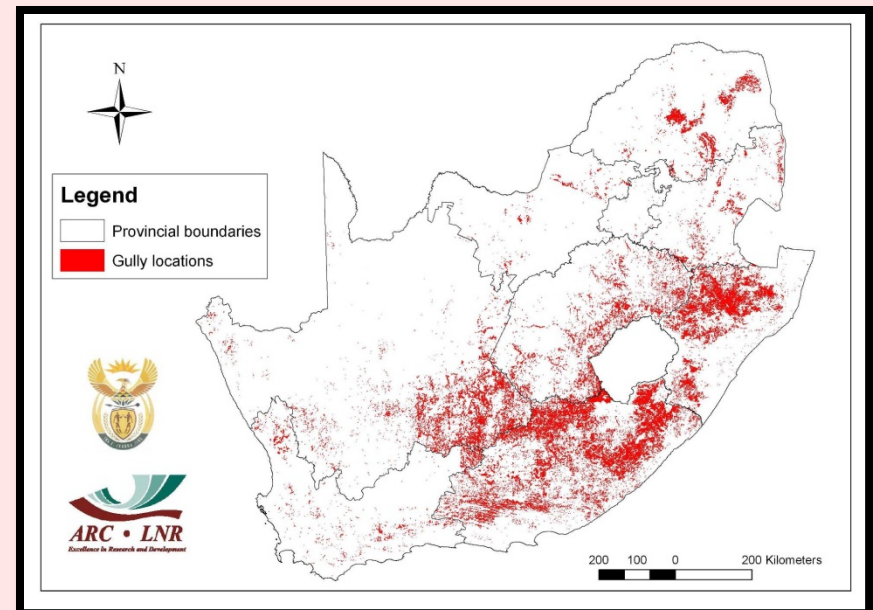
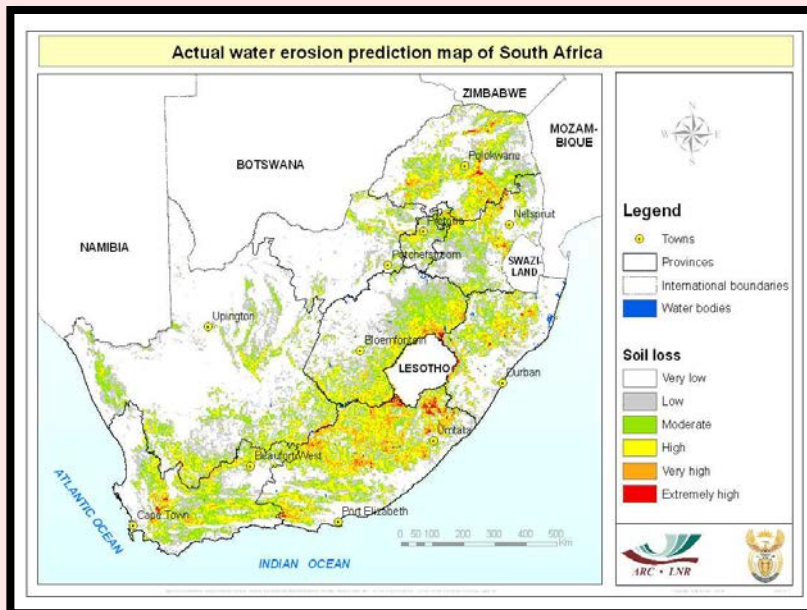
**Soil = major SA Export Product!!!**



# Soil Degradation in SA



- 3 recent studies (2009-2011)
  - Land Degradation Assessment in Drylands
  - Soil Protection Strategy (SPS)
  - Erosion modeling
- Predicted soil loss rate for SA = 12.6t/ha.yr<sup>-1</sup>



# Soil Physical Problems



Sealing



Reduced  
water holding  
capacity

Increased  
water run-off

Crusting

Compaction







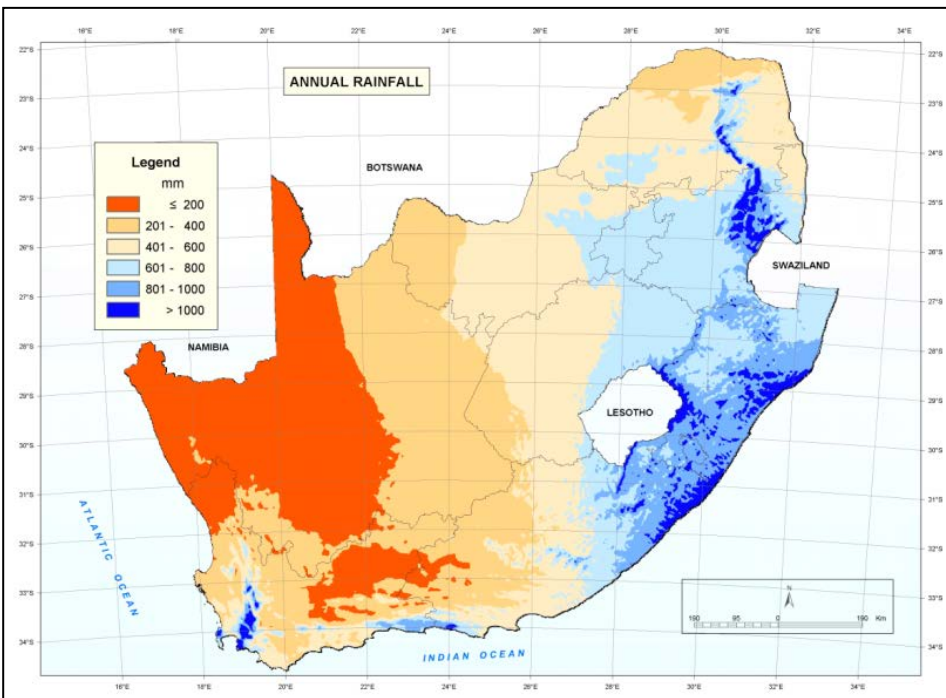
# Soil Chemical Challenges

Under fertilization

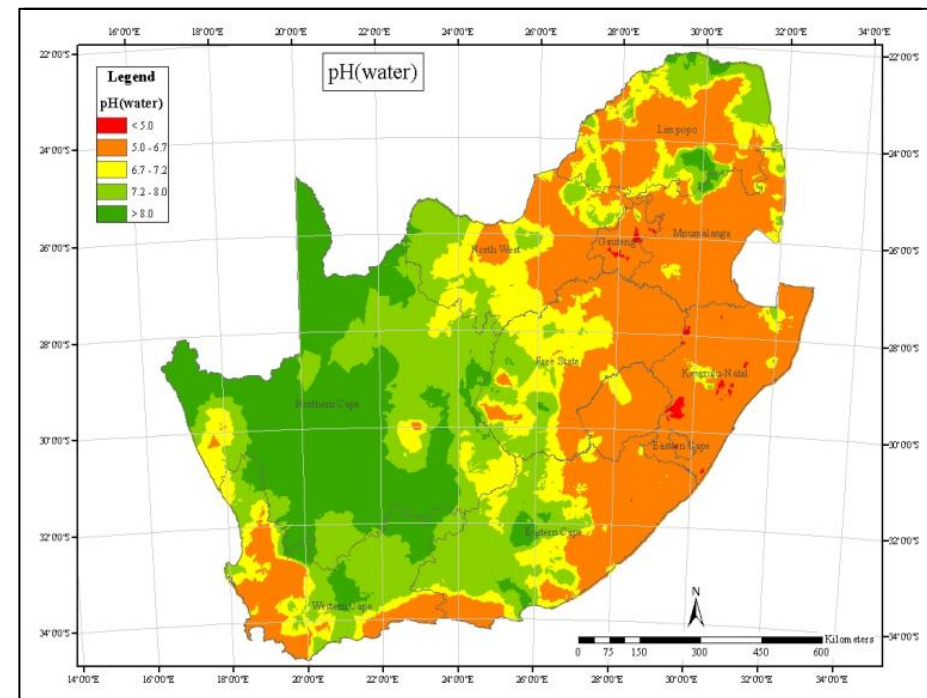
Loss of SOM

Over fertilization

Acidic soils



Rainfall Distribution



Soil pH Distribution





# Healthy Soil



## Conservation Agriculture (CA)

Soil erosion

soil health

Soil physical  
Degradation

Soil  
chemical  
degradation

# Farmer-led experimentation

## Key Questions:

- What approach do we follow?
  - Paradigm, methodologies, techniques
- How do we **build on and improve farmers' inherent capacity as researchers?**
- How do farmers take ownership of the process?
- Treatments: what and how many?
- How can we maintain scientific rigor, such as statistical measurements (qualitative and quantitative)?

# Demonstration trials / Farmer led trials

- Purpose of demonstration or farmer led trials:  
Reach local farmers; show methods and success first hand; training and improved knowledge for future farming



# Statistically designed trials

- Provide tool to researchers to determine if one system is really better than another
- This is the language of decision makers, who provide funding, who make policies etc.

# Complete randomize block design

1a	2a
3a	4a

1a	4a
3a	2a



United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

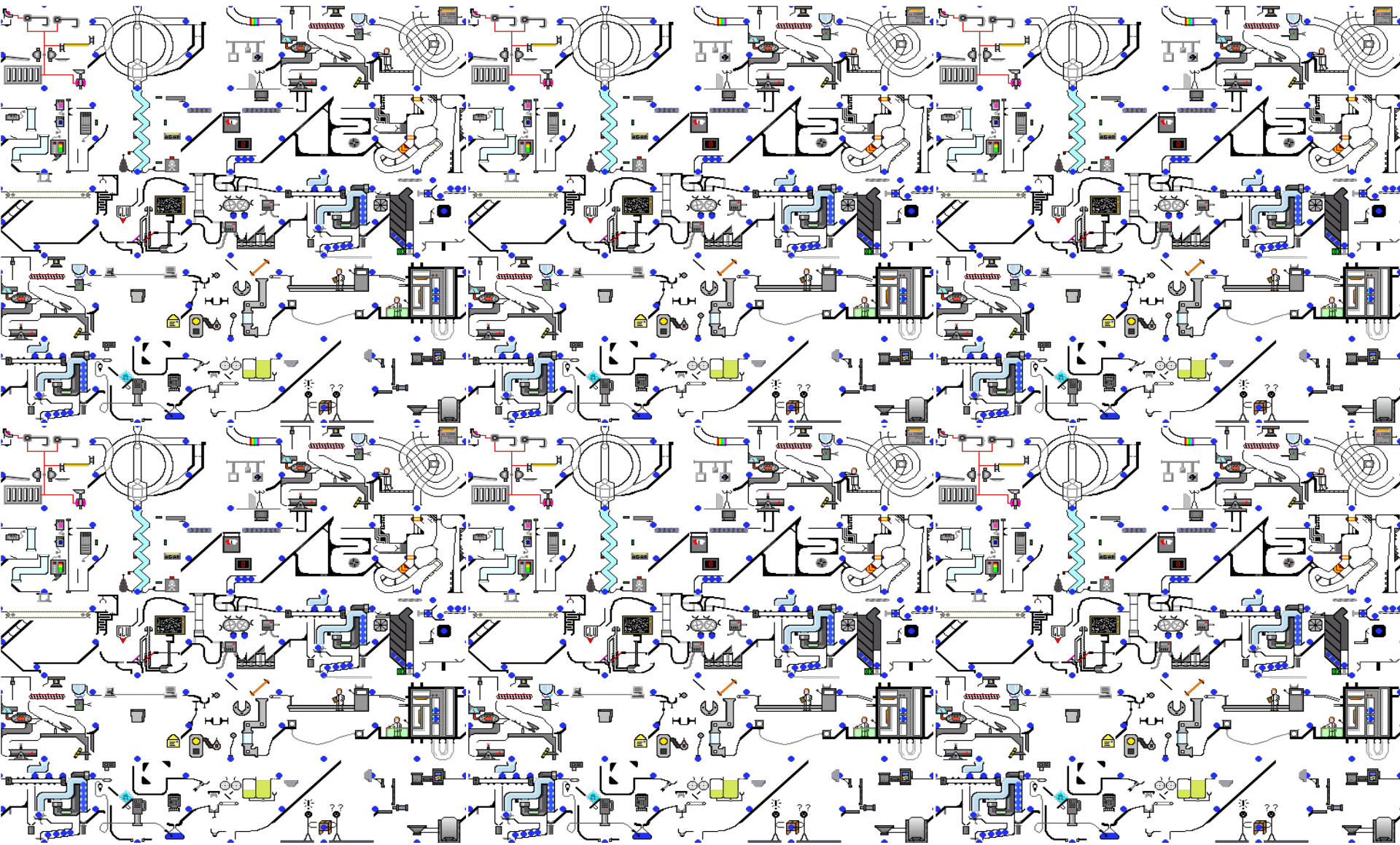
Soil  
Quality  
Institute

## Soil Quality Card Design Guide

A guide to develop locally adapted  
conservation tools



# Institutional Setup - SA





# Institutional Setup

## Agricultural Mandate

### Environmental Affairs (DEA)

- National Environmental Management: Biodiversity Act
- Protected Areas Act

### Water Affairs (DWA)

- National Water Act

### Agriculture, Forestry and Fisheries (DAFF)

- Conservation of Agricultural Resources Act
- Subdivision of Agricultural Land Act
- Preservation and Development of Agricultural Land Framework Act

### Rural Development and Land Reform (DRDLR)

- Development Facilitation Act

### Mineral Resources (DMR)

- Minerals and Petroleum Resources Development Act

Parastatals, NGOs, Tertiary Institutions, Research organizations, DBSA, SSSSA, Others

# Current Government Initiatives

## Agricultural Mandate

Agriculture,  
Forestry and  
Fisheries (DAFF)

Environmental  
Affairs (DEA)

- Working For Wetlands

- National LandCare Programme
- Comprehensive Agricultural Support Programme (CASP)
- Mechanization Programme

Rural  
Development  
and Land  
Reform (DRDLR)

- Comprehensive Rural Development Programme (CRDP)

# Thank you!

- FAO
- Robin Barnard (ARC-ISCW)
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- Lehman Lindeque (DAFF)
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- Nic Olivier (Inkqubela)

