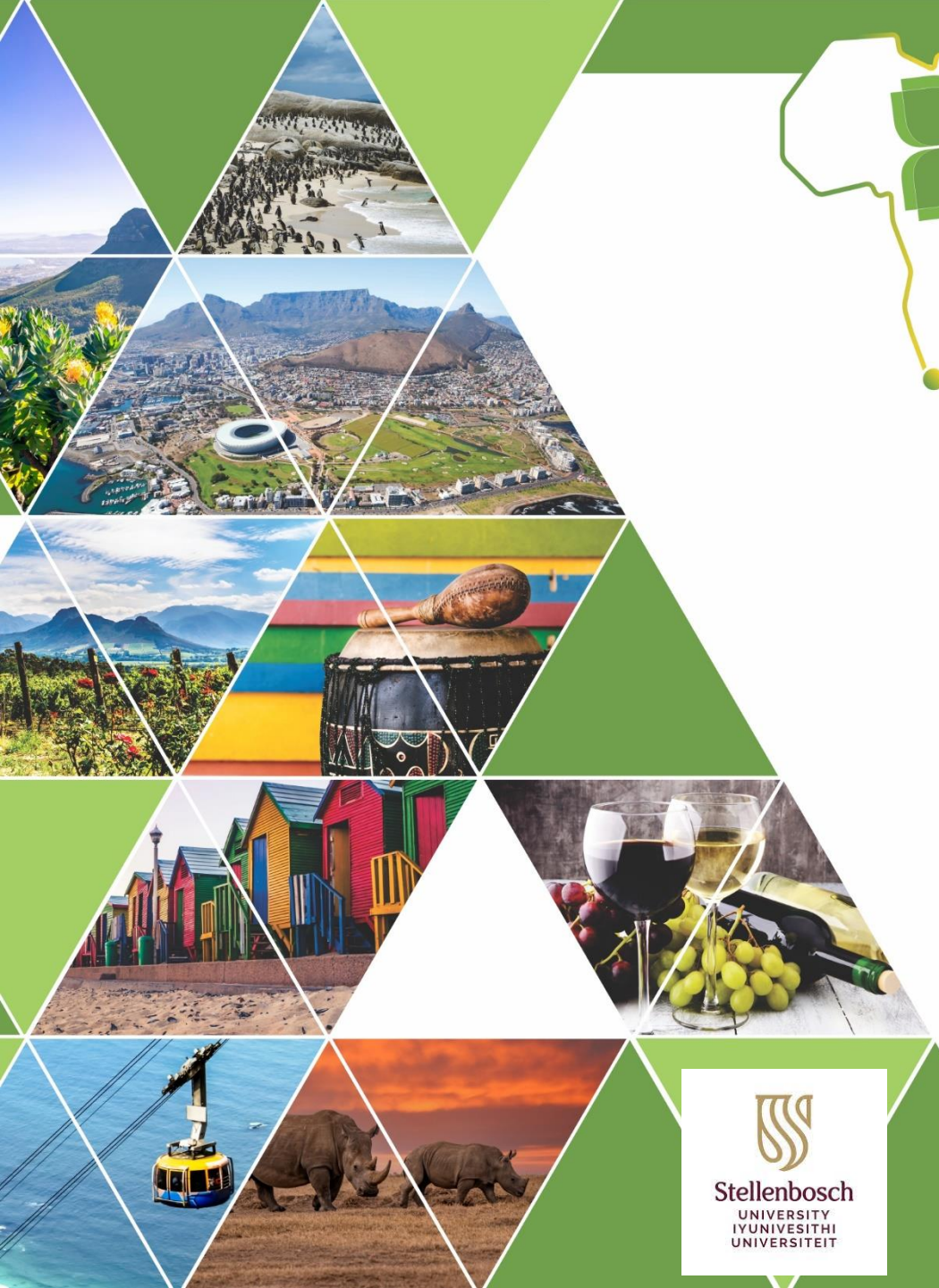


www.iswa2024.org Follow our journey

ISWA 2024
WASTE TO WEALTH:
SOLUTIONS FOR A SUSTAINABLE FUTURE
15 - 18 Sept | CTICC, CAPE TOWN

ISWA
Institute of Waste Management of Southern Africa

CITY OF CAPE TOWN ISIXEKO SASEKAPA STAD KAAPSTAD
forestry, fisheries & the environment
CAPE TOWN & WESTERN CAPE convention bureau by WESGRO
South Africa Inspiring new ways
SOUTH AFRICAN AIRWAYS

ISWA AFRICA

Collaborative governance of disposable diaper waste in rural areas

Stellenbosch UNIVERSITY IYUNIVESITHI UNIVERSITEIT

Charlotte Nell, MSc
PhD candidate, Stellenbosch University, South Africa
Supervisors:
Prof Rinie Schenck and Prof Martin de Wit

Funder and Project Partners

CSIR

our future through science

Waste Research, Development and Innovation Roadmap

A waste R&D and innovation programme for South Africa

RESPICE PROSPICE

UNIVERSITY *of the* WESTERN CAPE

KRUGER TO CANYONS BIOSPHERE REGION

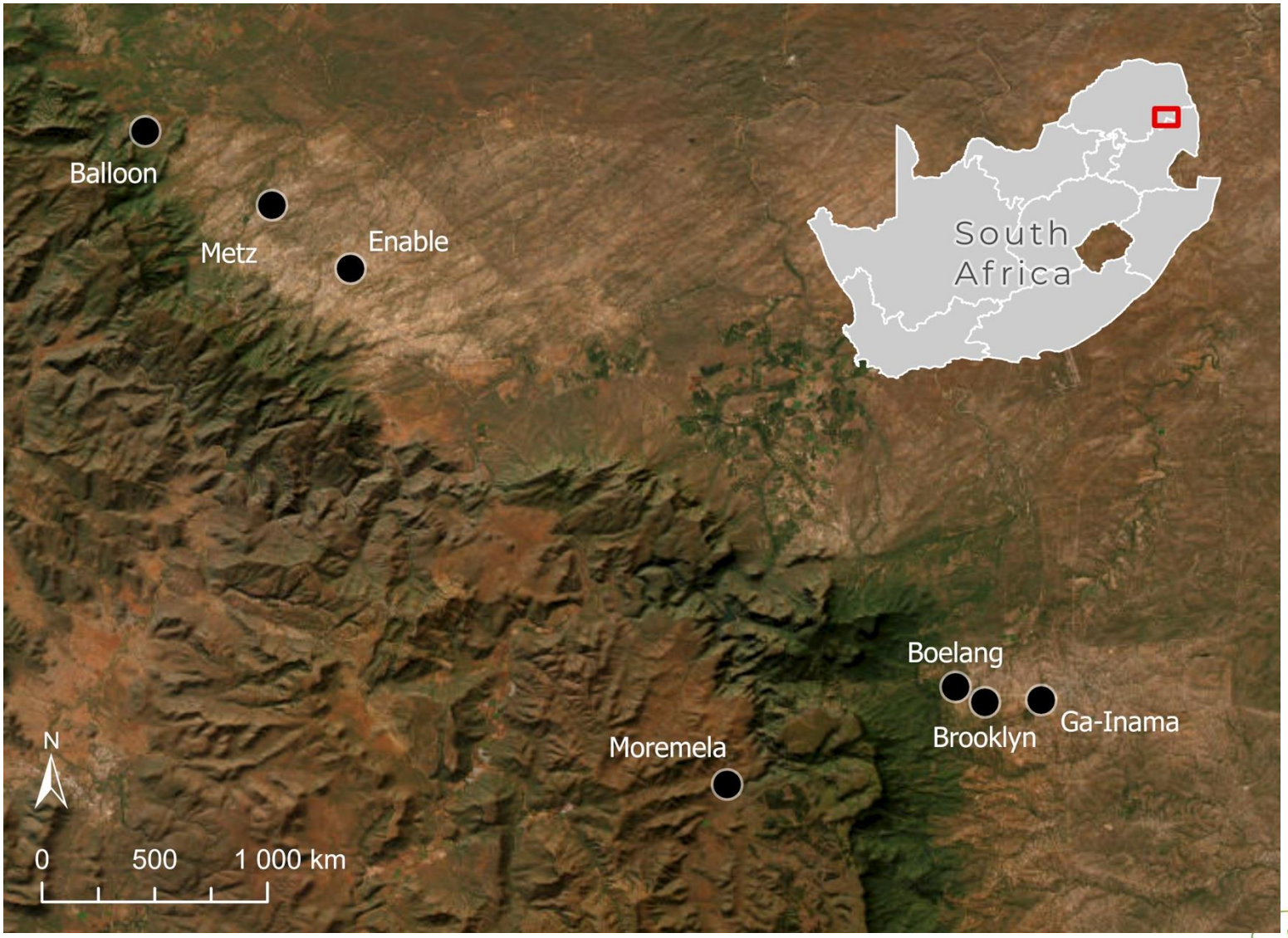
Aim

To develop a **collaborative governance system** to manage disposable diaper waste in rural areas

Aim

To develop a **collaborative governance system** to manage disposable diaper waste in rural areas

Local context



Local context

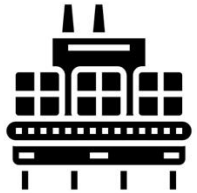
Local context

Bushbuckridge


±151,400


±35,000


1


0

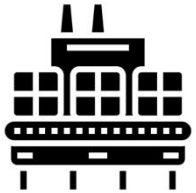
0


0

Maruleng


±7,500


1

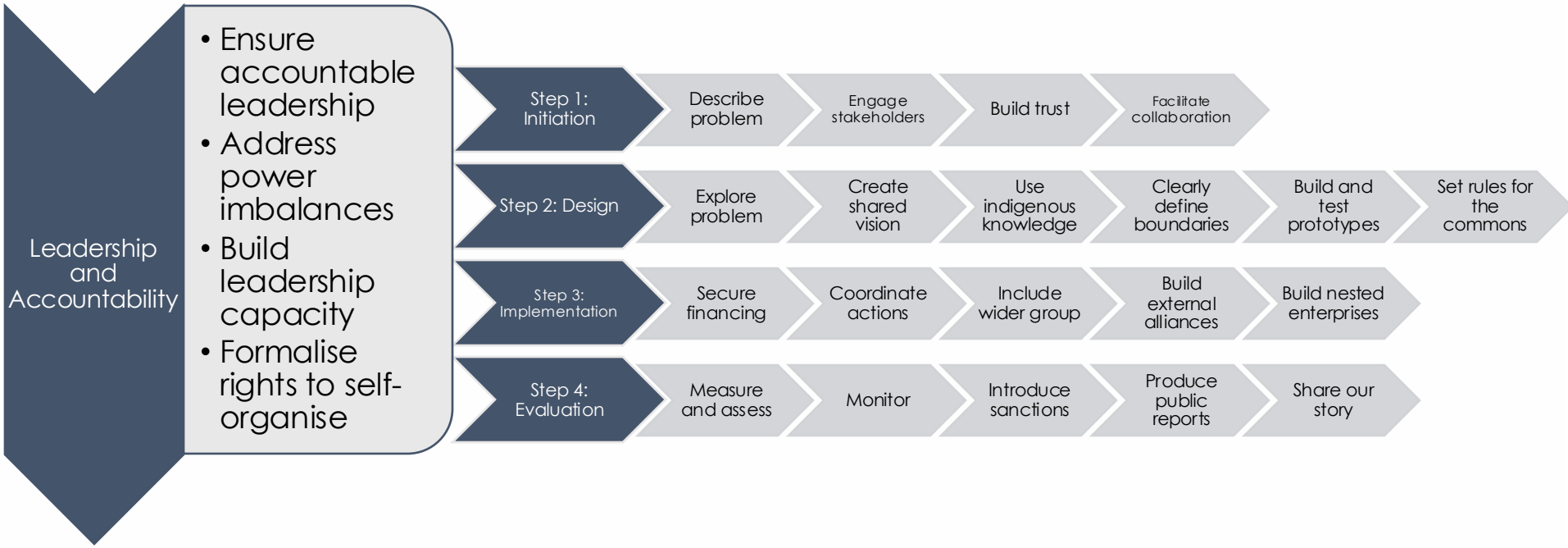

0

0


0

±151,400 ±35,300 0 0

Project framework



Data collected (Step 1: initiation)

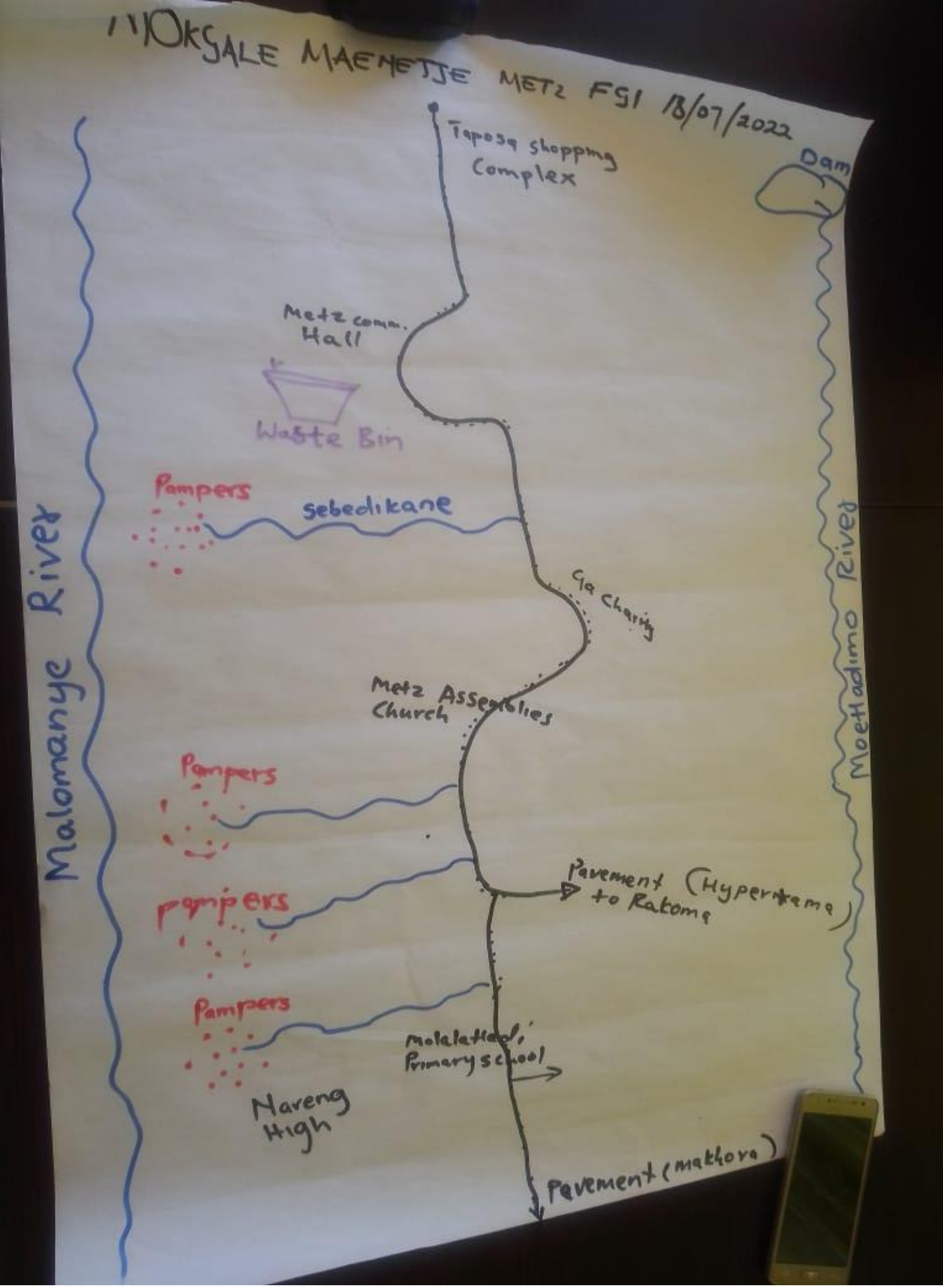
1575 baseline questionnaires conducted

Data collected (Step 1: initiation)

18 focus group discussions held

Data collected (Step 1: initiation)

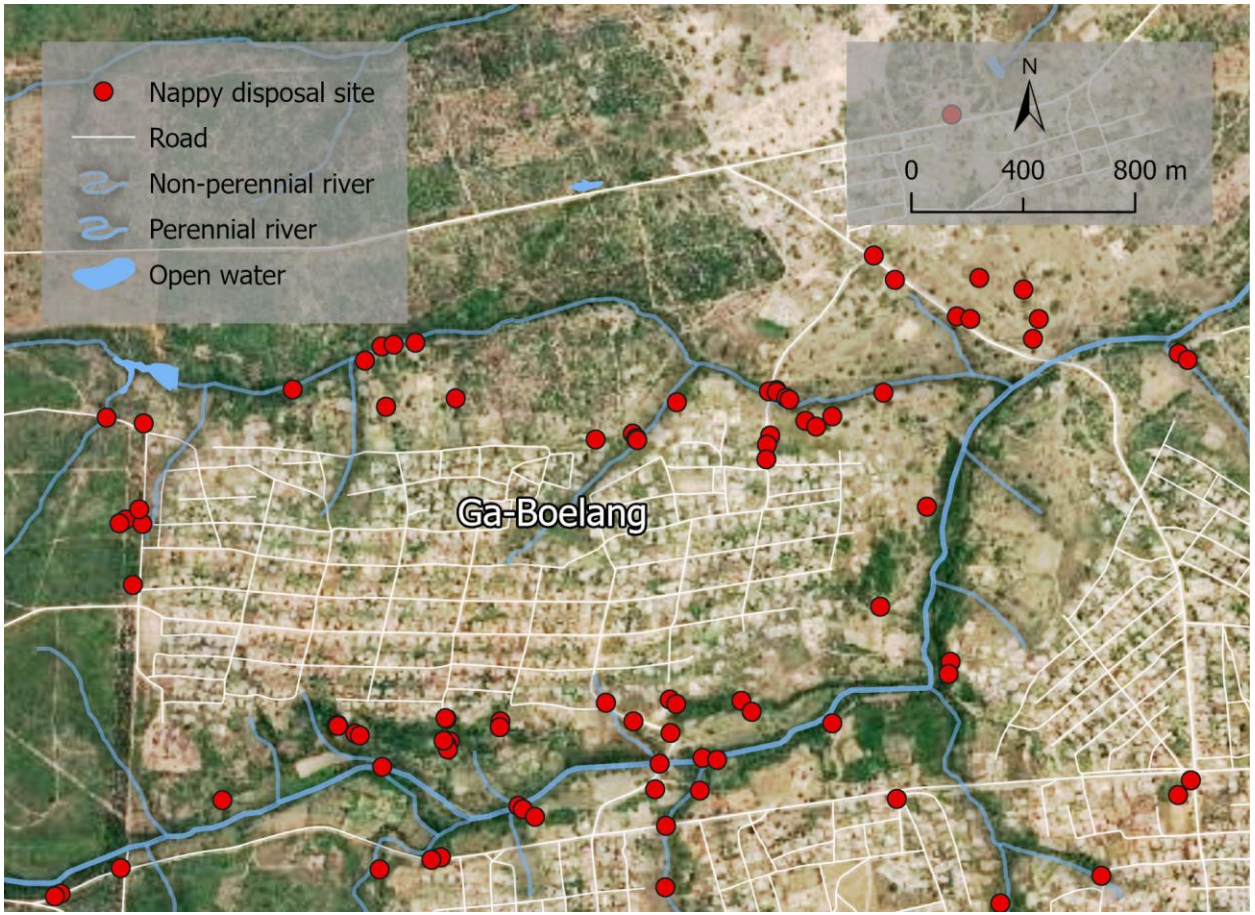
24 thematic drawings made


MOKGALE MAENETJE METZ FGI 13/07/2022
Taposa shopping Complex
Dam
Metz comm. Hall
Waste Bin
Pampers
sebedikane
Malomanye River
Moetladimo River
Ga Charity
Metz Assemblies Church
Pampers
Pavement (Hyperteme) to Rakoma
pampers
Pampers
Molalatladi Primary school
Nareng High
Pavement (mathora)

Bophelong Village
Makgwedi Stream
Nappies
Makgwedi 2 Stream
Mkhari Guest House
Sentlheleke Stream
Jerusalem Village
Mathicks Salon
Street light
14/07/22

Data collected (Step 1: initiation)

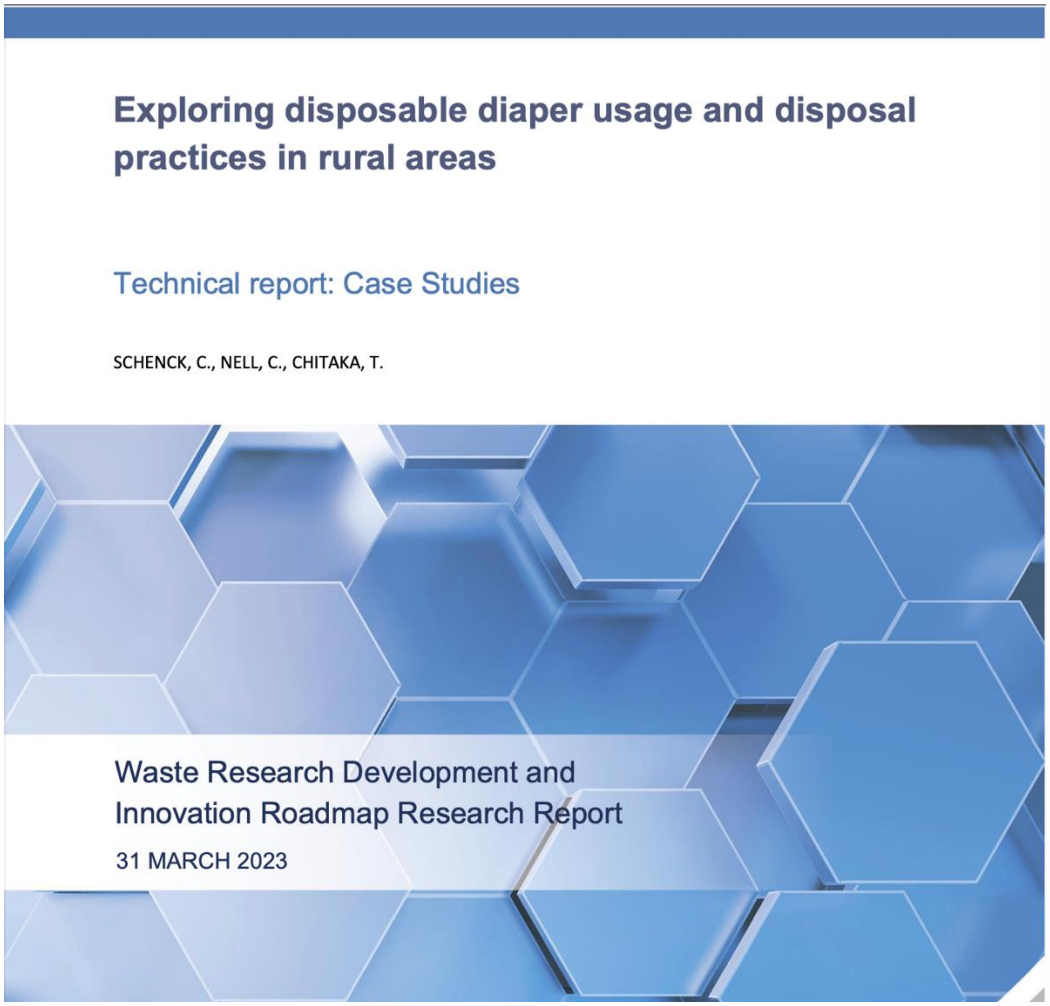
- GPS coordinates of diaper dumpsites collected over 6 month period (2022)



Key findings (Step1 initiation/Step 2: Design)

1. 37,000 diapers generated per day in Maruleng Municipality 172,000 diapers generated per day in BBR Municipality
2. On average R385 spent on diapers per child per month (R500 CSG)
3. People don't want to dump but have no other option – aware of environmental impact and potential risks
4. Incineration/burning of nappies supported/accepted
5. Skip bins seen as acceptable form of service rendering and people are willing to walk to central point to dispose of nappies (see Enable map)
6. Mixed feedback on willingness to use cloth: water availability and fashionability

Key findings
(Step 1: Initiation/Step 2: Design)



Key findings (Step 1: Initiation/Step 2: Design)

Environmental Challenges 16 (2024) 101001

Contents lists available at ScienceDirect

Environmental Challenges

journal homepage: www.elsevier.com/locate/envc

Disposable diaper usage, disposal practices and quantity estimation in rural areas

C.M. Nell [a,*], C.J. Schenck [b,1], J.W. Joubert [c], T.Y. Chitaka [b], M.P. de Wit [a]

[a] School of Public Leadership, Stellenbosch University, Stellenbosch 7600, South Africa
[b] Department of Social Work, DSI/NRF/CSIR Chair in Waste and Society, University of the Western Cape, Bellville 7535, South Africa
[c] KU Leuven, Institute for Mobility, Centrum voor Industrieel Beleid, Verkeer en Infrastructuur (CIB), Celestijnenlaan 300, Bus 2422, Leuven B-3001, Belgium

ARTICLE INFO

Keywords:
Disposable diapers
Absorbent hygiene products
Solid waste management
Rural communities

ABSTRACT

This study aimed to describe the disposable diaper usage, disposal practices and quantity estimation in a specified rural setting within a developing, sub-Saharan country, South Africa. Quantitative and qualitative data collection methods were used to collect primary data, which included survey research, focus group discussions, participatory thematic mapping, illegal dumping mapping and member checking. Most diapers end up within the natural receiving environment due to a lack of formalised waste management service provision. Dumping hotspots are water courses and streams. On average, each infant generates 4.47 diapers per day, while an average of 158,154 and 34,493 total diapers are generated daily within Bushbuckridge and Maruleng, respectively. High unemployment and grant-dependency rates characterise the study area, and households often spend the majority of child support grants to purchase diapers. Residents were willing to use a diaper disposal point and are not opposed to incineration. This study forms a comprehensive baseline to determine the feasibility of disposable diaper beneficiation options in rural areas.

Stakeholder engagement (Step 2: Design)

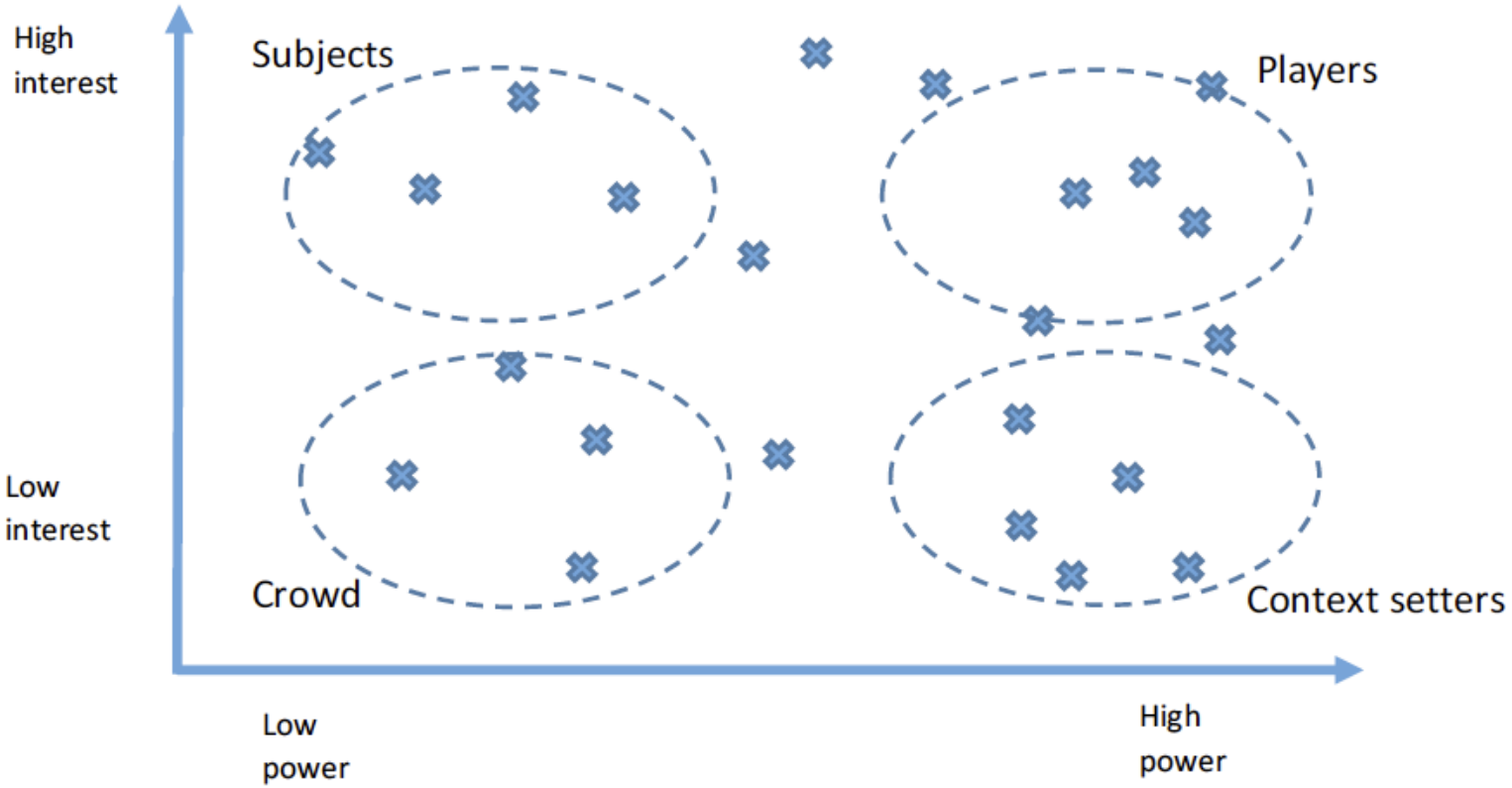


Fig. 6.1. Power Versus Interest Grid. *Source:* Adapted from Bryson et al. (2002, p. 572).

Stakeholder engagement – co-creation workshops (Step 2: Design)

Community committees (Step 2: Design)

- Chairperson, Deputy Chairperson, Secretary, Treasurer, Research Chairperson
- Nomination and election process was followed

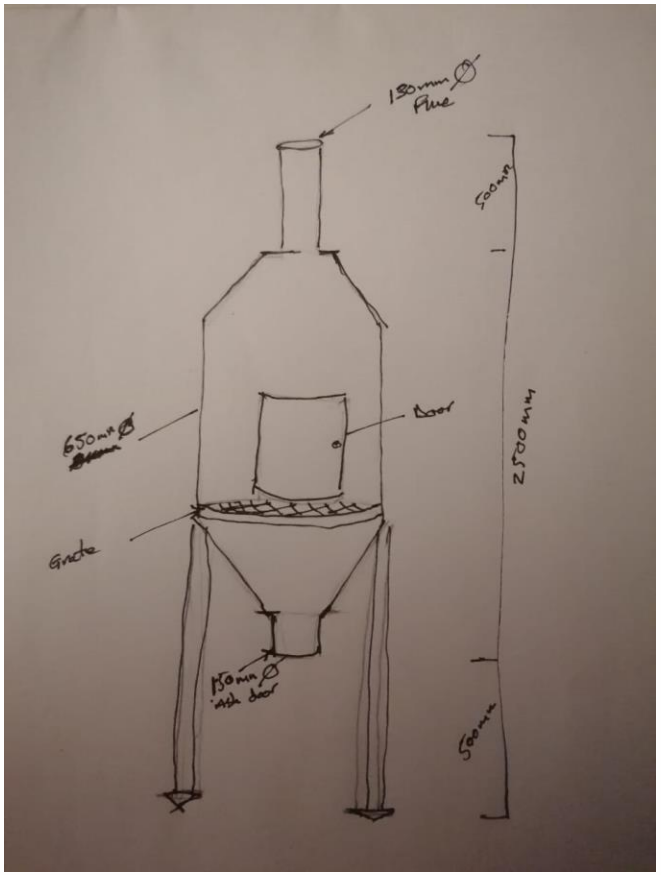
Project advisory group (Step 2: Design)

- 2 x Local Municipalities
- 1 x District Municipality
- 1 x Provincial Department (Limpopo)
- 3 x Committee Chair-people
- Research team

Pilot projects (Step 2: Design)

Pilots from August – December 2024:

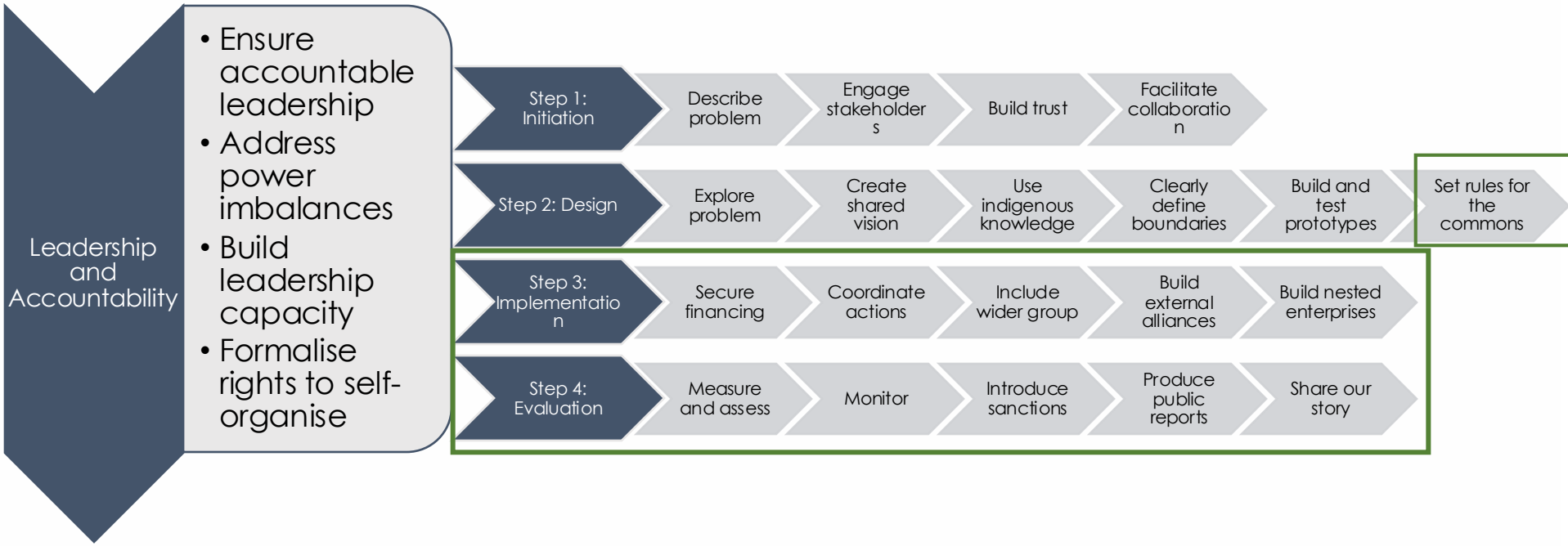
1. Reusable nappies;
2. Collection system & incineration



Reusable nappies
Step 2: Design

Collection system and incineration
Step 2: Design

Next steps


Leadership and Accountability
• Ensure accountable leadership
• Address power imbalances
• Build leadership capacity
• Formalise rights to self-organise
Step 1: Initiation
Describe problem
Engage stakeholders
Build trust
Facilitate collaboration
Step 2: Design
Explore problem
Create shared vision
Use indigenous knowledge
Clearly define boundaries
Build and test prototypes
Set rules for the commons
Step 3: Implementation
Secure financing
Coordinate actions
Include wider group
Build external alliances
Build nested enterprises
Step 4: Evaluation
Measure and assess
Monitor
Introduce sanctions
Produce public reports
Share our story

Lessons learnt so far

Local partner	Irreplaceable and critical. Project is a non-starter without K2C.
Co-creation/ collaboration	Intensive (time and input)
Facilitative leadership	Crucial
Project sustainability	Imperative. Impossible without a local partner (K2C) Why the project advisory group is so NB

Thank You!

Charlotte Nell, MSc
Stellenbosch University
South Africa
+27724482992
charlotte@aenv.co.za

Stellenbosch
UNIVERSITY
IYUNIVESITHI
UNIVERSITEIT