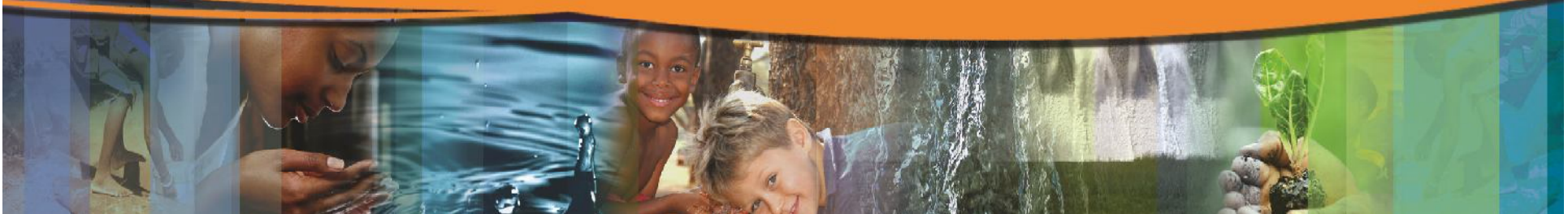




uMGUNGUNDLOVU
UMASIPALA WESIFUNDA
DISTRICT MUNICIPALITY
DISTRIK MUNISIPALITEIT

The Story of Recycling within uMgungundlovu

Riaz Jogiat
15 October 2013












RECYCLING ON MOOI RIVER LANDFILL SITE

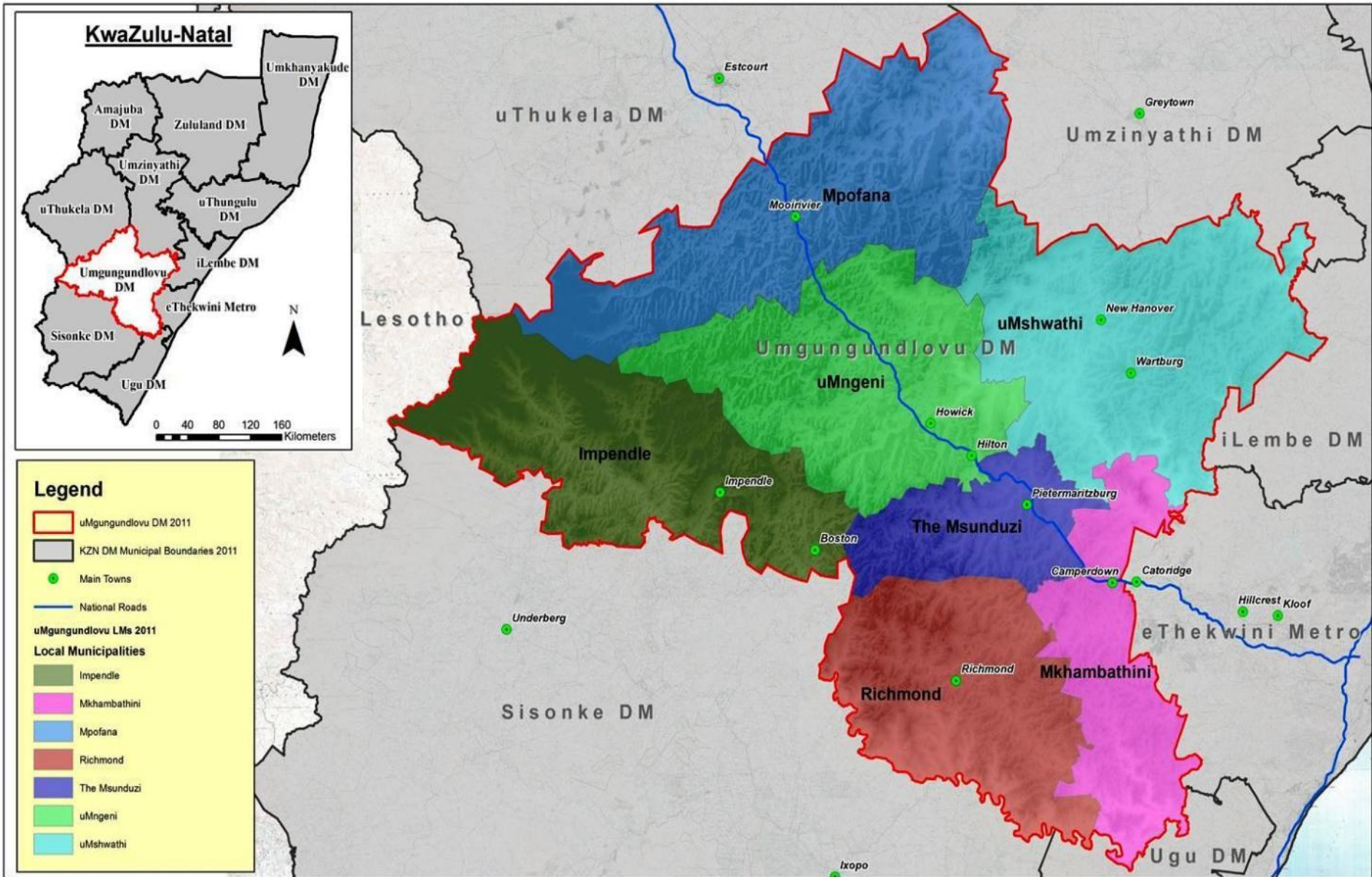


“ IF YOU CANT GIVE US WASTE WHAT CAN YOU GIVE US”

WASTE PICKERS AT PIETERMARITZBURG LANDFILL SITE

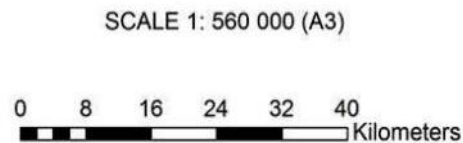


- | | | |
|---|--------------|------------------------|
|  | UMSHWATHI | WARTBURG / NEW HANOVER |
|  | UMNGENI | HOWICK |
|  | MPOFANA | MOOI RIVER |
|  | IMPENDLE | IMPENDLE |
|  | MSUNDUZI | PIETERMARITZBURG |
|  | MKHAMBATHINI | CAMPERDOWN |
|  | RICHMOND | RICHMOND |



Prepared for:
**Umgungundlovu SEA
 Locality Map**

Date: 17/09/2011



Mapping prepared by:

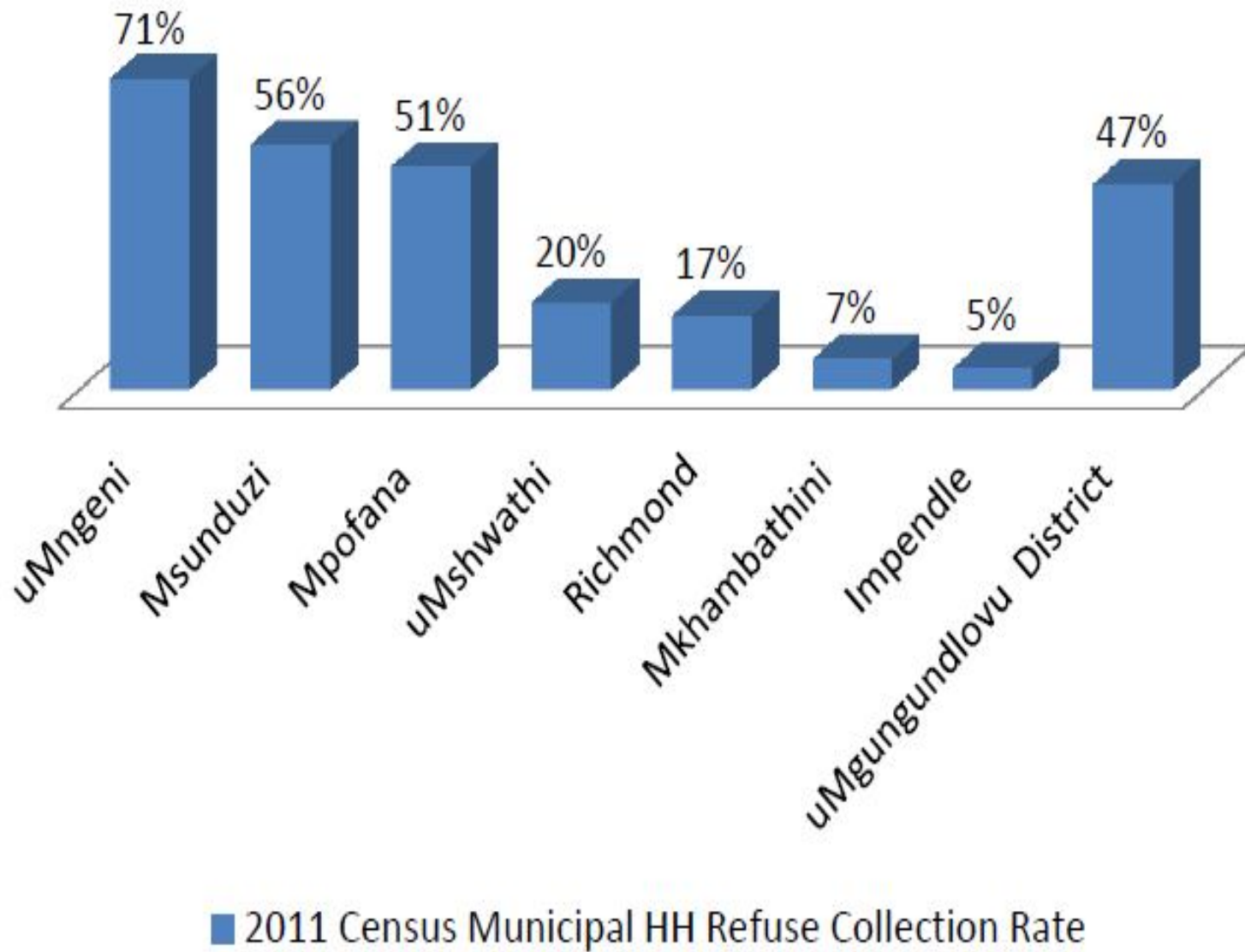
AFZELIA
 Environmental Consultants cc
 P O Box 95, Hilton, 3245
 Tel: 033 343 20 31/32
 Mobile: 082 925 6450
 Email: john@afzelia.co.za

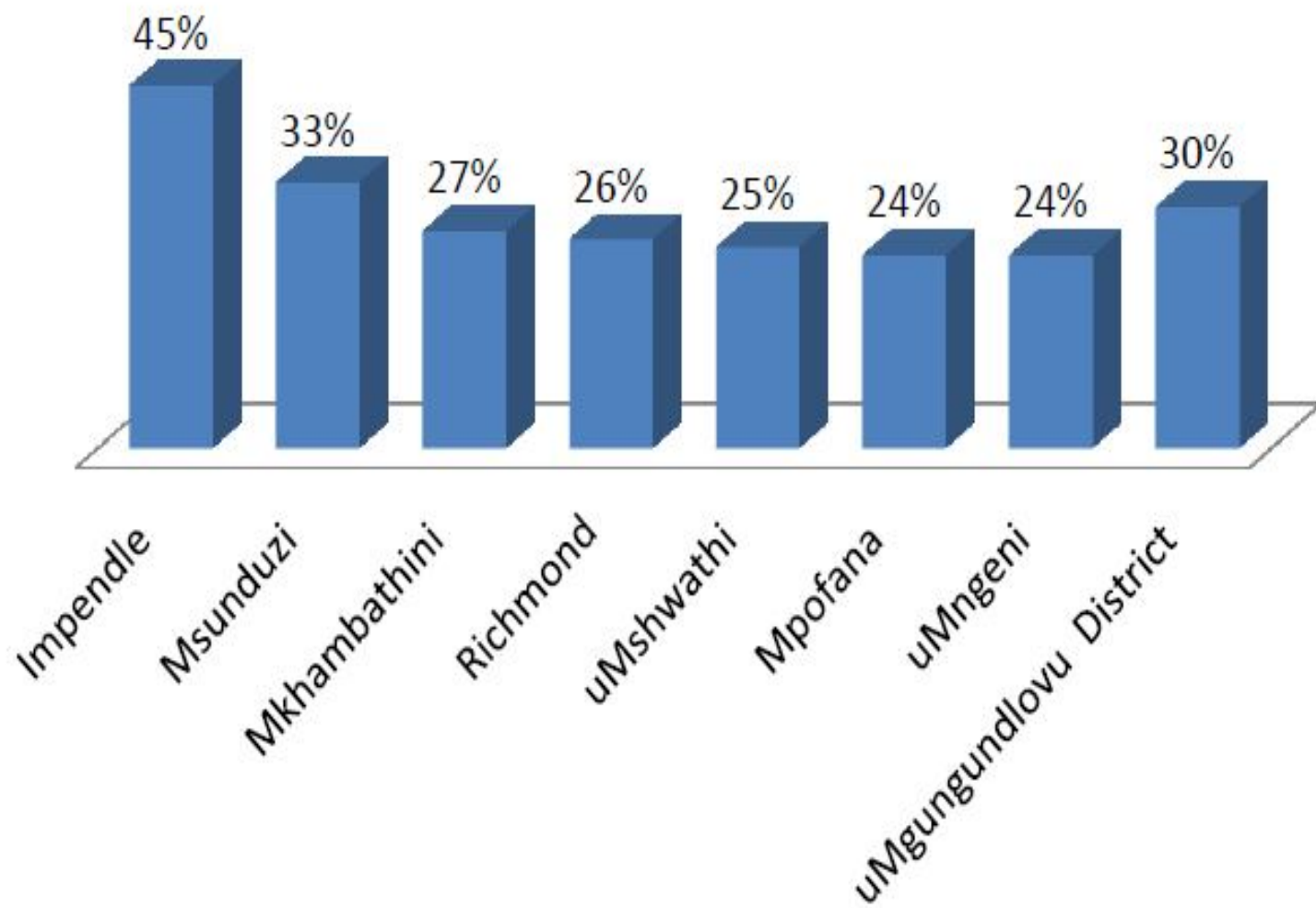
In association with:



FAST FACTS – UMGUNGUNDLOVU DISTRICT MUNICIPALITY

| | |
|--|--|
| POPULATION PROJECTION – 2011 CENSUS | 1,017,763 |
| DWELLING COUNT | 272,666 |
| % - URBAN DWELLINGS | 60% |
| COMBINED MUNICIPAL BUDGETS | R4,5 BILLION |
| HOUSEHOLD INCOME | 2/3 OF HH INCOME LESS R 72, 000 PER ANNUM |
| UNEMPLOYMENT RATE – 2011 CENSUS | 30% |
| % OF HH – ACCESS TO BASIC WATER | 80.4% |
| % OF HH – NO ACCESS ELECTRICITY | 86.1 % |
| % OF HH – ACCESS BASIC SANITATION | 49.4 % -BASIC 39.5 % - VIP |
| % OF HH- ACCESS TO REFUSE COLLECTION RECYCLING RATE | 47% 30% estimate |
| DIVERSION OF ORGANIC WASTE FROM LANDFILL | 0% |



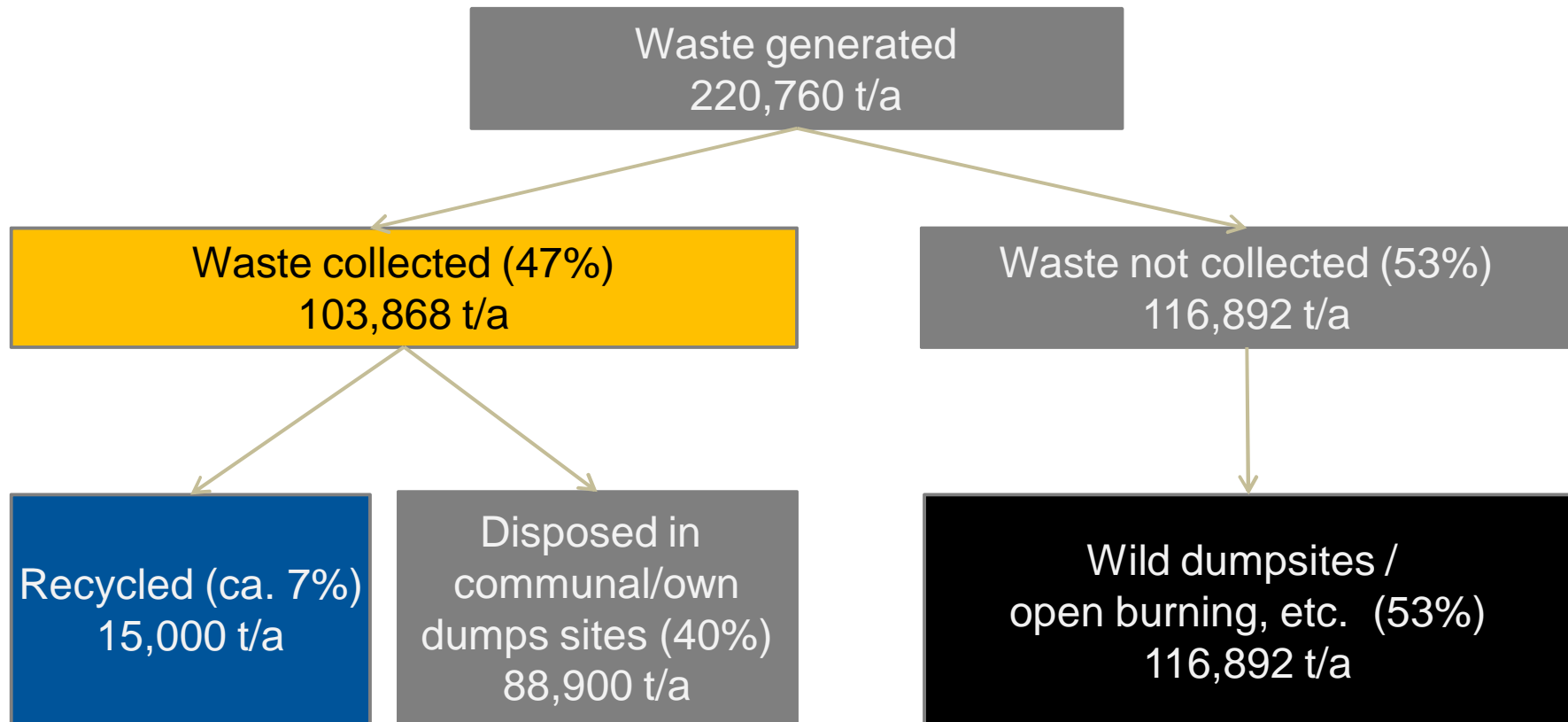


■ 2011 Census Unemployment Rate



Status of Waste Management in UMDM

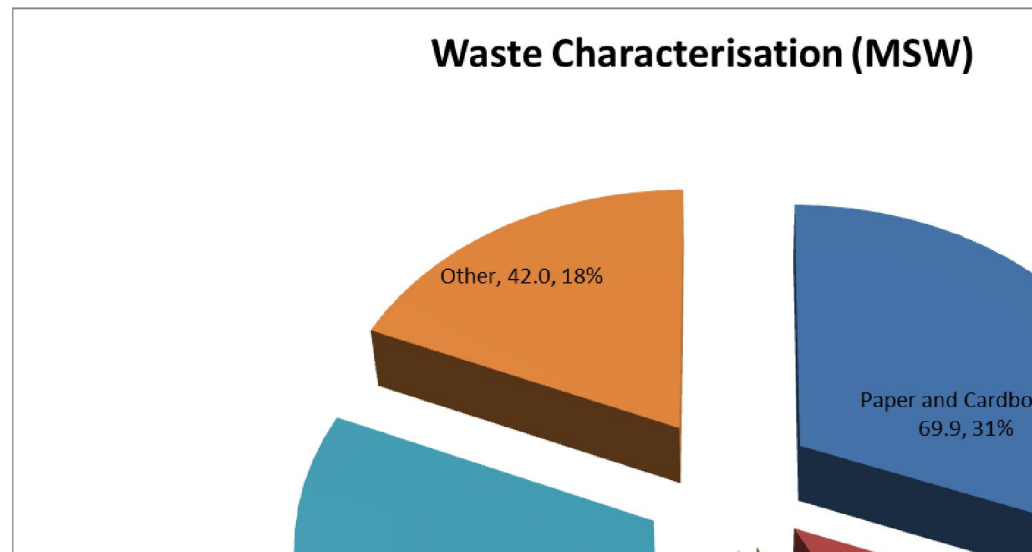
Current waste streams (summarised from KfW PDD and FS with 2013 data)

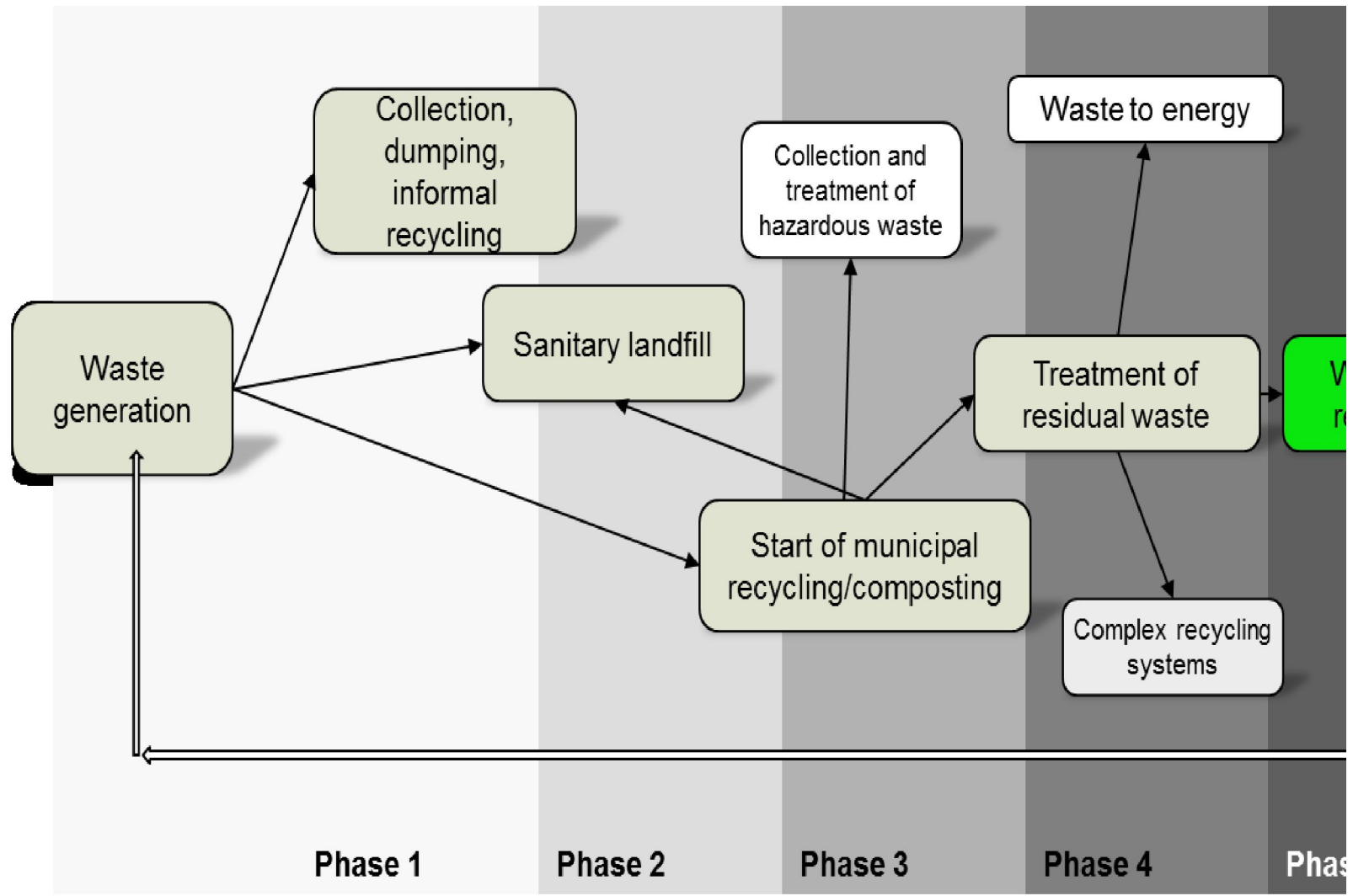




Status of Waste Management in UMDM

Composition of Municipal Waste in UMDM





UMGUNGUNDLOVU 2020 WASTE VISION



2020 WASTE MANAGEMENT TARGETS

Increase waste collection rates from 47% to 70%

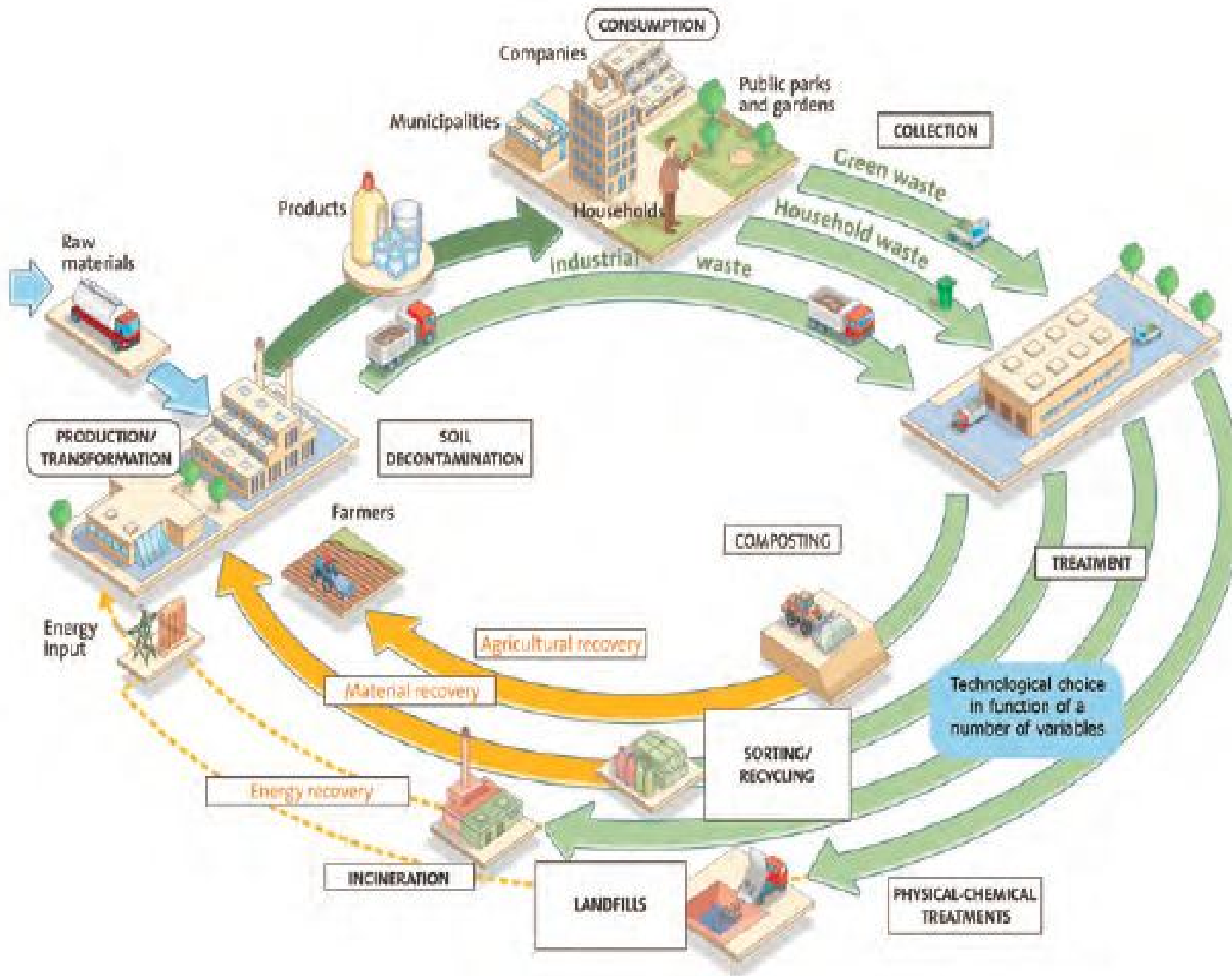
Separation and sale of 50% of the recyclables in the municipal waste stream

Separation and composting of 75% of garden waste

Permits for the new regional landfill are available and funding secured

Snapshot of National Situation

| | |
|--|--|
| Refuse Collection | 2007 – 61% HH – Access to weekly collection 92% collection rate in Metros 62% collection rate in Secondary Cities 57% collection rate in Towns 16% collection rate in Rural |
| Recycling | Glass – 19% Metals – 71% Paper – 54% Plastic – 20% E Waste - ? |
| Waste Disposal | Many unlicensed and poorly operated |
| Treatment and Energy Recovery | Very limited number of treatment facilities & Contests on Viability |
| Waste Prevention and Extended Producer Responsibility | Limited and Lobby of Big Business |
| Enforcement and Compliance | Very Limited |



LOCAL GOVERNMENT

KEY MANDATORY OBLIGATIONS

Must ensure residents have access to refuse removal, storage and disposal services in terms of national standards Section 9 (2)

Must submit an integrated waste management plan to the MEC, Section 11 (4) as well as an annual performance report Section 13 (3)

Must provide receptacles for the collection of recyclable waste. Section 23 (2)

Must designate a waste management officer to be responsible for coordinating waste management services. Section 10 (3)

KEY DISCRETIONARY OBLIGATIONS

May set local standards and norms for the separation, compaction and storage of waste. Section 9 (3)

May set local standards for waste avoidance, littering, minimisation of waste, re-use, recycling and recovery of waste. Section 9 (3)

May direct waste to specific waste treatment and disposal facilities. Section 9 (3)

May require waste transporters to register their activities. Section 25 (1)

National Waste Management Strategy

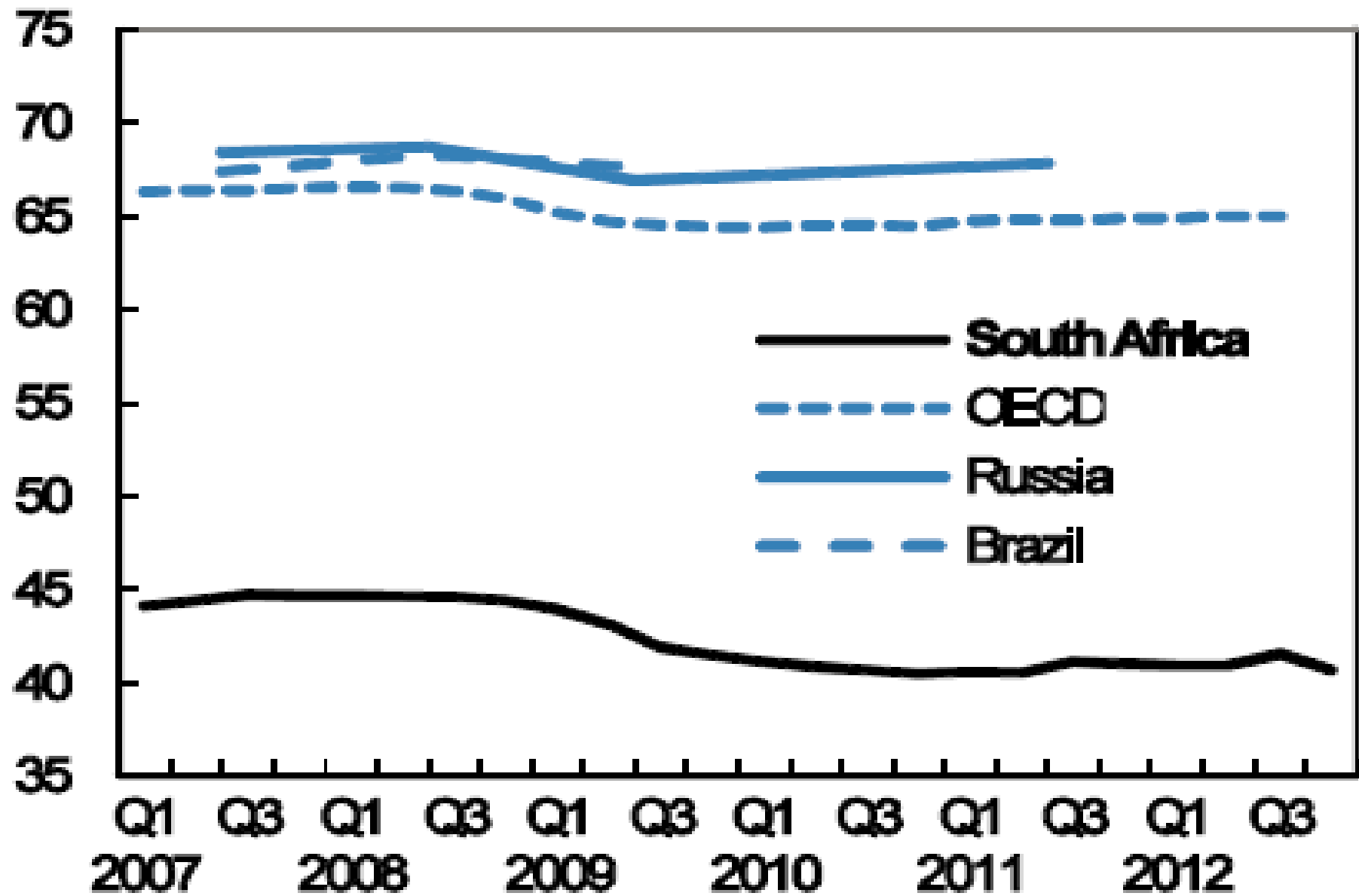
| | Description | Targets (2016) |
|----------------|--|--|
| Goal 1: | Promote waste minimisation, re-use, recycling and recovery of waste. | <ul style="list-style-type: none"> • 25% of recyclables diverted from landfills for re-use, recycling or recovery. • All metropolitan municipalities, second order cities and large towns have initiated source separation programmes. • Achievement of waste reduction and recycling targets set in IndWMPs for electronics, plastics, paper and packaging, pesticides, lighting and tyres industries. |
| Goal 2: | Ensure the effective and efficient delivery of waste services. | <ul style="list-style-type: none"> • 95% of urban households and 75% of rural households have access to adequate levels of waste collection services. • 80% of waste disposal sites have proper environmental management systems. |
| Goal 3: | Grow the contribution of the waste management sector to the economy. | |

Financial Potential of Recycling – uMgungundlovu

| LMs | Mixed Paper [‡] | | Mixed Plastic [†] | | Glass [‡] | | Metal [‡] | | Total (Rand) |
|--------------|--------------------------|-------------------|----------------------------|-------------------|--------------------|------------------|--------------------|------------------|-------------------|
| | Tons | Rand | Tons | Rand | Tons | Rand | Tons | Rand | |
| Umshwathi | 1,697 | 2,545,500 | 1,064 | 1,276,800 | 1,337 | 467,950 | 1,021 | 1,225,200 | 5,515,450. |
| uMngeni | 2,903 | 4,354,500 | 1,376 | 1,651,200 | 844 | 295,400 | 596 | 208,600 | 6,509,700. |
| Mpofana | 838 | 1,257,000 | 461 | 553,200 | 449 | 157,150 | 336 | 117,600 | 2,084,950. |
| Impendle | 310 | 465,000 | 251 | 301,200 | 427 | 149,450 | 332 | 116,200 | 1,031,850. |
| Msunduzi | 21,536 | 32,304,000 | 9,983 | 11,979,600 | 5,544 | 1,940,400 | 3,851 | 1,347,850 | 47,571,850. |
| Mkhambathini | 627 | 940,500 | 498 | 597,600 | 833 | 291,550 | 648 | 226,800 | 2,056,450. |
| Richmond | 1,072 | 1,608,000 | 653 | 783,600 | 782 | 273,700 | 595 | 208,250 | 2,873,550. |
| Total | | 43,474,500 | | 17,143,200 | | 3,575,600 | | 3,450,500 | 67,643,800 |

‡: R1,500/tonne; †: R1,200/tonne; ‡: R350/tonne; ‡: R1,200/tonne

C. Employment rate (aged 15-64, seasonally adj.)



JOB CREATION POTENTIAL OF RECYCLING – FRIENDS OF EARTH STUDY

Table 11: Jobs per thousand tonnes of recycled material

| Key recyclable material | Ratio of jobs/1000 tonnes recycled material | | |
|-------------------------|---|---|--------------------|
| | Jobs created per 1000 tonnes (LEPU, 2004) | Jobs created from US studies (CASCADIA, 2008) | Assumed EU27, 2008 |
| Glass | 0.75 | 2.6 | 0 |
| Paper | 3.5 | 1.8 | 0 |
| Plastic | 15.6 | 9.3 | 0 |
| Iron and Steel | 5.4 | - | 0 |
| Aluminium | 11 | - | 0 |

2011 - uMgungundlovu Material Composition Survey

| Population | Rural | Urban | Rural | Urban | Rural | Urban |
|---------------------|------------|------------|---------|---------|-------|-------|
| Income | Recyclable | Recyclable | Organic | Organic | Waste | Waste |
| Low | 38.30 | 32.35 | 32.18 | 34.04 | 29.52 | 33.61 |
| Medium | 29.56 | 33.73 | 43.64 | 37.68 | 26.80 | 28.59 |
| High | 40.39 | 40.19 | 35.08 | 36.58 | 24.53 | 23.23 |
| Rural Comm-Ind | 36.88 | | 49.76 | | 13.36 | - |
| Urban Commercial | - | 46.51 | | 28.36 | | 24.83 |
| Urban Industrial | - | 64.54 | | 17.91 | | 17.55 |

Monopolies - Food for Recyclables - Bartering





Waste Pickers – Pietermaritzburg Landfill

Recycling at Pietermaritzburg Landfill





More than 250 pickers collect an estimated 3000 tonnes per annum waste pickers have worked here for decades .

Some organised into informal co-operatives



Mooi River Material Recovery Facility

RECYCLABLE MATERIALS AT MOOI RIVER





**Co-op started in
2009**

**Employs 15 – 20
people**

**Won International
Award in 2011**

**Collect 15% of all
materials at
Landfill
ie. 500 tonnes pa**

**Won 2013 KZN
provincial DAEA
Recycling Award**

The hundreds of small recyclers and the big things they do !



COLLECTION OF RECYCLABLES WITHIN UMGUNGUNDLOVU DISTRICT

ANNUAL GENERATION:

- 70,000t pa OF RECYCLABLES
- GLOBALLY RECYCLABLE COLLECTION CEILING 60-70 %
- UMDM = 50,000 tpa

CURRENT COLLECTION:22,000t

- CENTRAL WASTE – 18,000t pa
- WILDLANDS – 2,000t pa
- OTHER – 2,000t pa
- **SMME's & CO-OPS - Recover 8,000tpa of 22,000t pa**
- **30,000t pa STILL TO BE COLLECTED**

REMAINING SOURCES OF RECYCLABLES:

- HOUSEHOLDS
- PUBLIC SECTOR OFFICES
- INDUSTRY

TARGET

- INCREASE SMALL RECYCLERS SHARE FROM 8,000tpa to 24,000tpa
- INCREASE RECYCLING RATE FROM 30% TO 60%
- BUILD STRONG SMME's & CO-OPERATIVES

uMgungundlovu Small Recyclers Support Programme

Build unity & Organise small recyclers into a trading association

Launch of uMgungundlovu Small Recyclers Trading Association – Nov 2013 with 500 members

Developed Strategic Plan July 2013

Lobby for Policy Change

- Small recyclers should collect from households
- Small recyclers should collect from government buildings
- Some subsidy is needed to ensure viability in early stages
- Food 4 waste is a concept for drug addicts from Brazil – has it a place in SA?

Greater transparency in pricing amongst small recyclers and buyers

SMS pricing info system and buyer offers – Jan 2014

- Pool selling of recyclables to become price takers
- Explore exports to get better prices

Unity and Co-operation



uMGUNGUNDOVU
SMALL RECYCLERS
ASSOCIATION

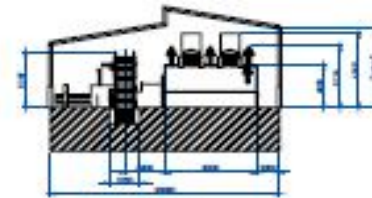
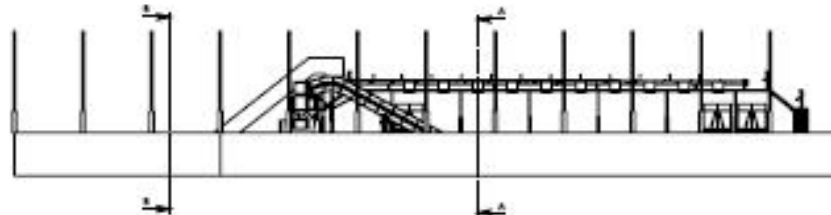
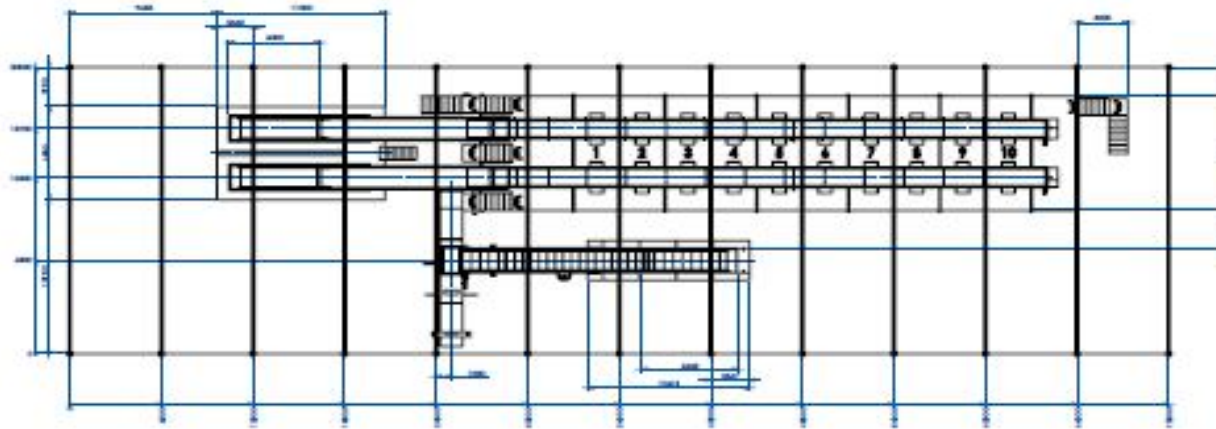
uMgungundlovu Small Recyclers Support Programme Build Infrastructure & Buy Equipment



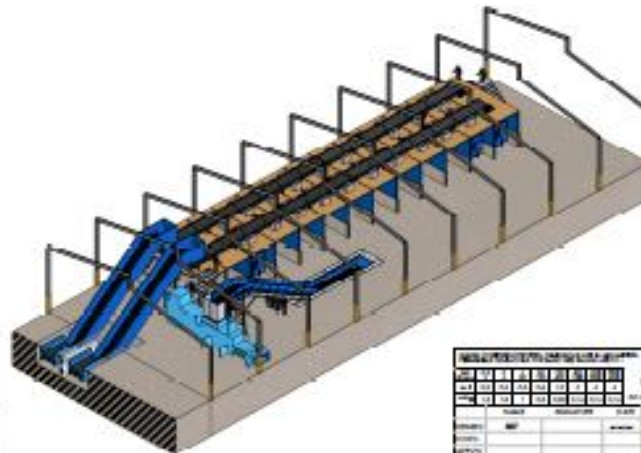
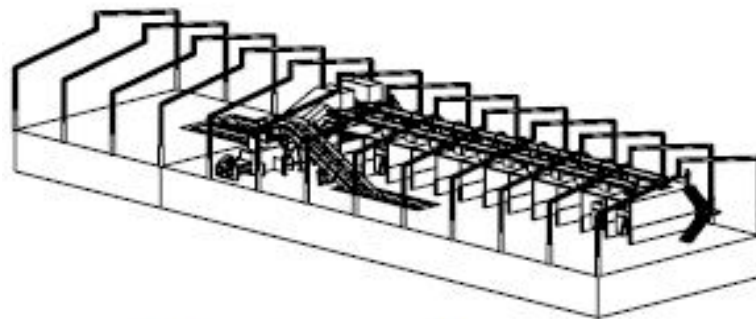
NEW MOOI RIVER MATERIAL RECOVERY CENTRE – APRIL 2013



DESIGN FOR PIETERMARITZBURG MATERIAL RECOVERY FACILITY

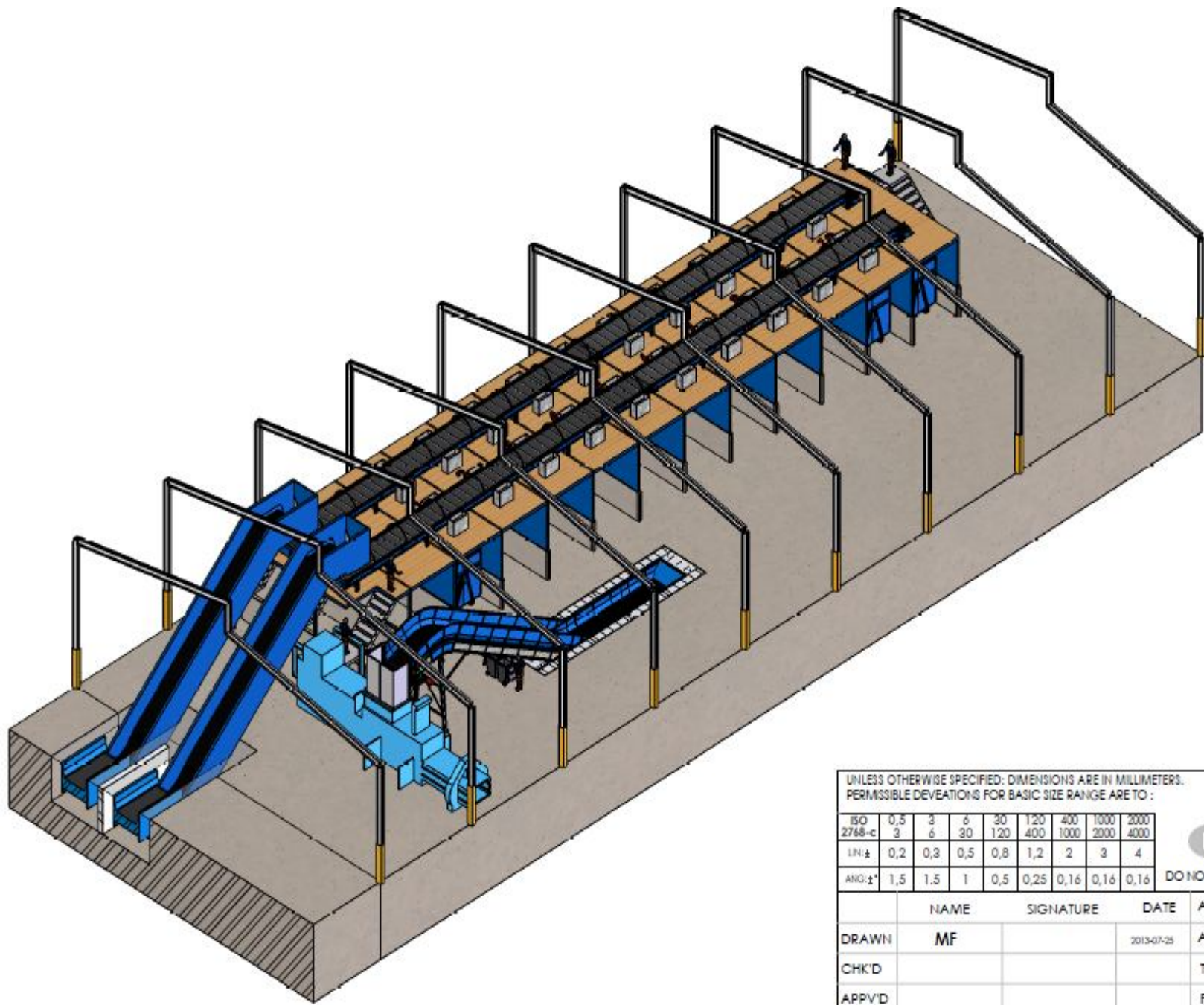


SECTION A-A



SECTION B-B

| REVISIONS | | PROJECTION | | AKURA | |
|--|------|------------|-------|------------------|-------------------|
| NO. | DATE | BY | CHKD. | SCALE | PROJECT |
| 1 | | | | | LAYOUT PROPOSAL 6 |
| PROJECT NO. 2516-000-71 SHEET NO. 0 | | | | 2516-000-71 0 | |



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS.
 PERMISSIBLE DEVIATIONS FOR BASIC SIZE RANGE ARE TO :

| | | | | | | | | |
|--------|-----|-----|-----|-----|------|------|------|------|
| ISO | 0,5 | 3 | 6 | 30 | 120 | 400 | 1000 | 2000 |
| 2768-c | 3 | 6 | 30 | 120 | 400 | 1000 | 2000 | 4000 |
| LIN:± | 0,2 | 0,3 | 0,5 | 0,8 | 1,2 | 2 | 3 | 4 |
| ANG:±* | 1,5 | 1,5 | 1 | 0,5 | 0,25 | 0,16 | 0,16 | 0,16 |

m

DO NOT SCALE

| | | | | | |
|--------|------|-----------|------------|---------------|----|
| | NAME | SIGNATURE | DATE | ASSY DWG: | NA |
| DRAWN | MF | | 2013-07-25 | ADAPTED FROM: | NA |
| CHK'D | | | | TREATMENT: | NA |
| APPV'D | | | | FINISH: | NA |

PROJEC

Material Recovery Facility

- **SEPT 2011** – KZN COGTA - uMgungundlovu DM - R21mln
- uMgungundlovu R3mln and Msunduzi LM R1mln – Co Funding
- **Total Budget – R25 million**
- **MRF Cost – R20 Million**
- **Co-operation Agreement between UMDM and Msunduzi LM**
- **MRF Construction to begin November 2013 - End June 2014**



MODEL TO MANAGE MATERIAL RECOVERY FACILITY

- **MRF Operational by July 2014**
- **Introduce Source Separation at Household , Public Sector level and then Business Sector**
- **Recyclables collected by Small Collectors of Recyclables**
- **Local Government – Supply Clear Bags**
- **Small Recyclers supply Pietermaritzburg MRF**
- **Wastepicker Co-operative separate and package waste for sale to End Users**
- **Income from sale of recyclables – Pay small collectors and wastepicker co-operatives and a portion to maintain facility**
- **Local government to subsidise costs of electricity, water, fuel and maintenance**
- **Less than 5 operational MRF's in SA - None adopt this model – Pilot Project**

SUPPORT FOR HOUSEHOLD AND PUBLIC SECTOR COLLECTION OF RECYCLABLES

- **GOVT DEPT SIGN AGREEMENT WITH RECYCLERS TO SUPPLY RECYCLABLES –**
- **UMDM INTERNAL PROGRAMME STARTS NOV 2013**
- **TRADE CONTROL / LICENSING ?**
- **RELIABLE VEHICLES - UMDM TENDER FOR TWO TRUCKS – MARCH 2014 DELIVERY DATE**
- **LEASED TO TRADING ASSOCIATION**
- **BIN BAGS – CLOSED LOOP RECYCLING POSSIBLE – MUCH INTEREST**

POSSIBLE FUNDERS

- TRIED AND FAILED WITH GREEN AND JOBS FUND 3 TIMES TO DATE !
- DEA – ENVIRONMENTAL INFRASTRUCTURE PROGRAMME APPLICATION?
- GERMAN DEVELOPMENT BANK – TECHNICAL SUPPORT FOR ADVANCED WASTE MANAGEMENT SYSTEMS – CONFIRMED FUNDING
- UMGUNGUNDLOVU LOAN – KFW

Key Challenges

- **Getting Corridor - Msunduzi, uMngeni, Mkhambathini & uMshwathi LM 's to act together**
- **An Economic Development opportunity for Informal SMME's and Co-operatives**
- **Need a Common Strategy and Policy to build the sector - Need for a summit with LM's , Provincial Govt and SMME & Co-op Sector**
- **Demonopolise the sector by regulating the sector through trade control , incentives and encourage transparent pricing**
- **Setting up remanufacturing enterprises using recyclable materials**

Thank You

