



Mitigation actions in the waste sector

Recycling of Urban Solid Waste
Use of Waste as RDF
Sanitary Landfill

Antoine Belon



AMOR – Associação Moçambicana de Reciclagem

1. NAMA architecture

Main NAMA – Implementation of the National Strategy of Integrated Municipal Solid Waste Management

Estrategia de Gestão Integrada de Resíduos Sólidos Urbanos em Moçambique ((MICOA 2012)

Component NAMA 1
Recycling through Waste Transfer and
Recycling Centers

Component NAMA 2
Use as Waste as RDF for
cement factory

Component NAMA 3
Waste management models and Sanitary
Landfill in Mozambican Municipalities

Component NAMA 4
Primary Collection System in
Mozambican Municipalities

Component NAMA 5
Revision and implementation
of new municipal legislation

Component NAMA 6
Training of Municipal Waste Agents

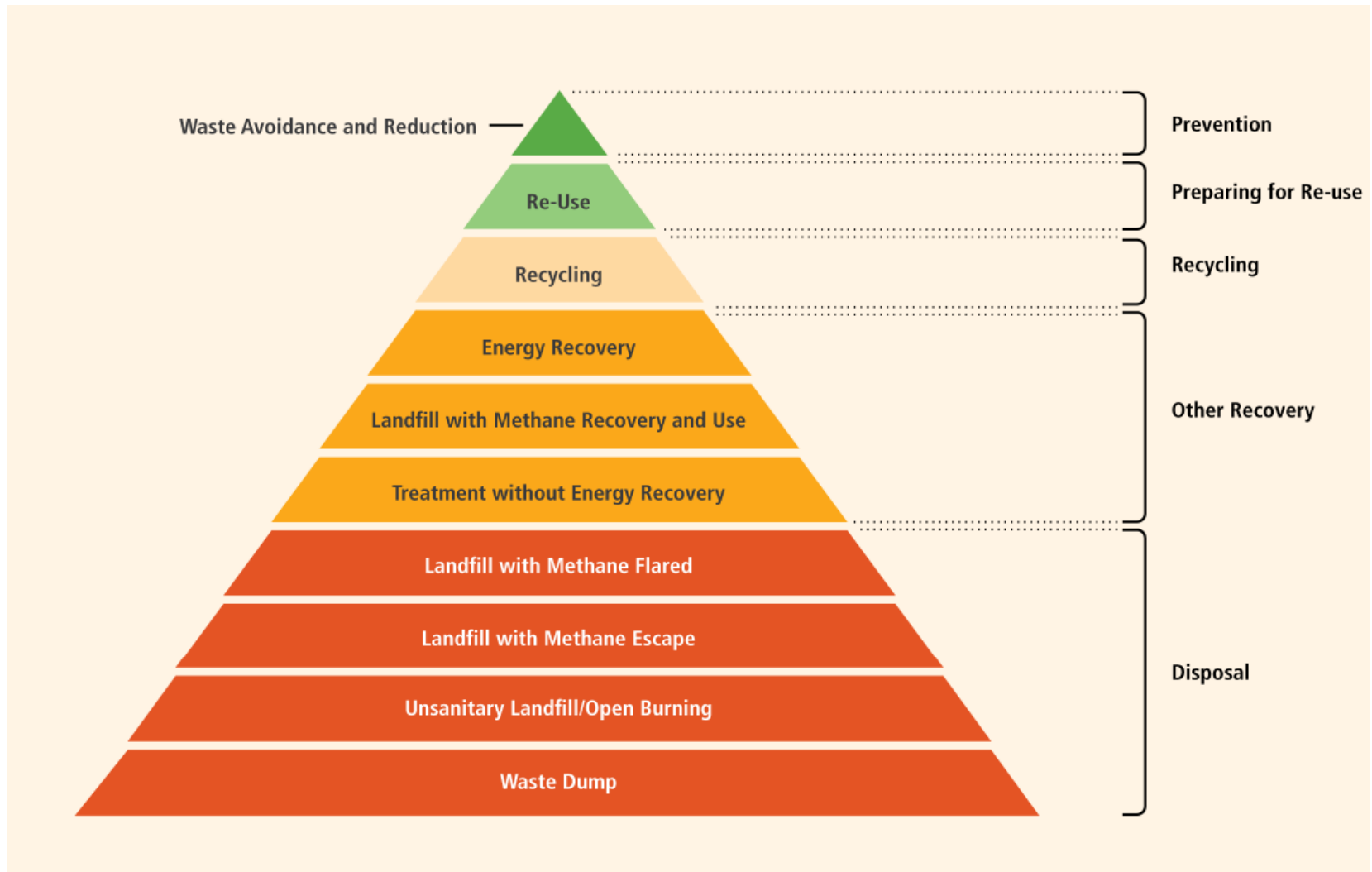
Component NAMA 7
Research and creation of database

Component NAMA 8
Environmental awareness
to promote separation at
source

Component NAMA 9
MRV and implementation system

Component NAMA ..
.....

2. Waste Management hierarchy



3. Recycling through Waste Transfer and Recycling Centers

Ongoing activities at small scale:
500t of waste recycled/month in Mozambique
Maputo : 1100 t of waste /day

Pilot Waste Transfer and Recycling center in
Vilankulo (25 000 inhabitants)

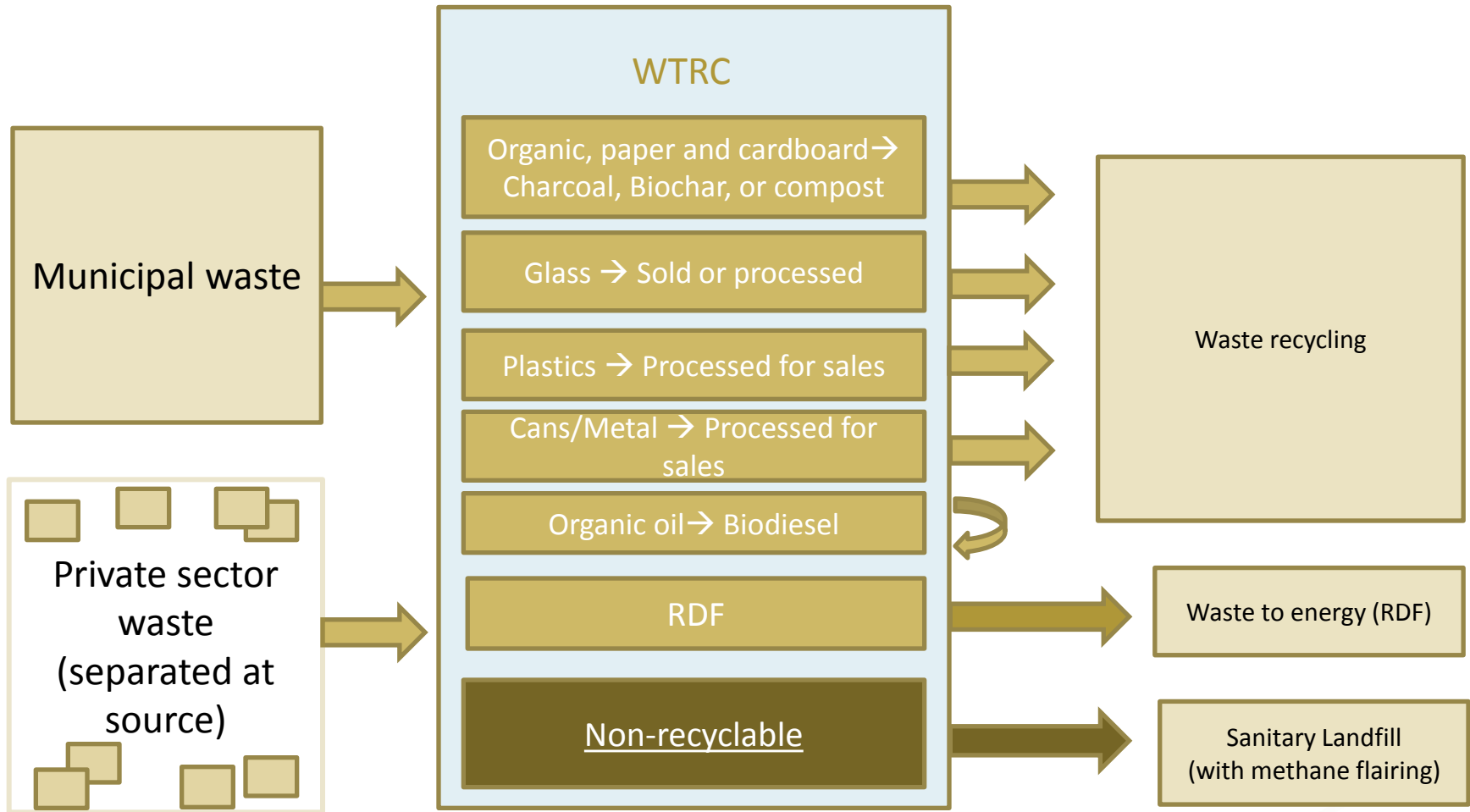


REDUCE REUSE RECYCLE

Replication
(scale up) in Beira
(600 000 inhabitants)



3. Recycling through Waste Transfer and Recycling Center



3. Recycling through Waste Transfer and Recycling Center

NAMA seeking support for preparation:

Financial mechanisms support:

- Study of different mechanisms to incentive recycling activities and de-risk the initial investment for recycling activities (undertaken by public as well as private sector).
- Example : fund with different tools including but not limited to results-based payment (i.e payments according to the amount of waste recycled), loans and equity (shareholding in the vehicle managing the transfer and recycling center), etc.
- Other example : tax reduction for recyclers

Institutional capacity-building:

- Adoption of a municipal law foreseeing waste separation at source for large waste producers as well as an adapted tax system
- Capacity-Building to enforce the municipal law and the tax system
- Conception of guidelines and tender templates for the management of Waste Transfer and Recycling Center
- Capacity-Building to establish fair partnerships with the private sector

4. Use of waste as RDF by cement factories

- Worldwide, the cement industry : 5% of the annual global anthropogenic carbon dioxide emissions.
- According to the WBCSD, 80% of future CO2 emissions → developing and in transition countries
- Mozambique : cement industry developing rapidly in recent years, with clinker and cement sales increasing by 13.7% in 2010.
- Waste is growing as well...
- Use waste as RDF by cement factory

- So far : 1 kiln only, in Maputo and Matola (to produce clinker)
- Cimentos de Moçambique

- Consultative process started in 2011
 - interest from several actors
 - Barriers and needs have been identified

4. Use of waste as RDF by cement factories

- Support required to CTCN (UNEP)
- Response Plan being developed:
- Legal aspects : ownership of the waste, conformity with existing laws, implications for the Municipalities, licensing and permitting, tendering, institutional arrangements, etc.
- Technical aspects : specs of the RDF, filters, engineering design of waste preparation site, etc.
- Economic aspects : costs and savings, energy price projections and comparisons of different energy sources, etc.
- Market aspects : price of RDF, possible sale price and economic model, etc.

CTCN to support activities of the development phase

After this:

Support for implementation...!

5. Waste Management Models and Sanitary Landfills

National Strategy for Environmental Management : by 2025, eliminate dumpsites and open sanitary or controlled landfills.

Elaboration of studies and report for the construction of landfills in the cities of Maputo and Matola, Pemba, Inhambane, Mocimboa da Praia, Vilankulo and Lichinga.

But : More work needs to be done on a case-by-case basis

- Does every municipality need a sanitary landfill?
- How shall these sanitary landfills be built?
- How shall these sanitary landfills be sustainably managed?

5. Waste Management Models and Sanitary Landfills

- Develop appropriate Waste management models for all provincial capitals involving public and private participation, including landfill management models such as concession to the private sector or Build Operate Transfer.
- Economic viability and long-term strategy : specifically analyzed in the preparation phase , with different scenarios for each municipalities.
- Technical support: Calculate the GHG emission reductions of each scenario compared to Business as Usual scenario.

6. Conclusion

- NAMAs documents on the USB Flash
- Soon to be registered at the UNFCCC registry
- Finding support for implementation of the NAMAs

Together for a sustainable waste sector in Mozambique



Obrigado pela atenção

Antoine Belon
Director – AMOR
Antoine.belon@amor.co.mz
AMOR – www.amor.co.mz

