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# MUNICIPAL SOLID WASTE MANAGEMENT IN DEVELOPING COUNTRIES

Lessons learned and vision, from the perspective of  
an international private operator

ADB, MAY 2014

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EST UNE BELLE  
ENTREPRISE



# EXECUTIVE SUMMARY

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- **Context: Unprecedented transformation on the waste market**
  - Waste market is rapidly growing in emerging countries
  - Solid waste management will be specific
  - Energy is key
  
- **Framework : leap frog to specific solutions**
  - Adapt waste hierarchy to local realities
  - Avoid technology / complex infrastructures trap
  
- **Solutions : focus on treatment vs sophisticated collection solutions**
  - Simple multipurpose platforms
  - Adapted contractual models
  - Examples of successful experiences

# SPECIFICITIES OF WASTE IN EMERGING COUNTRIES

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## 1. CONTEXT: WASTE MARKET And ISSUES IN EMERGING COUNTRIES

## 2. PROPOSED SUEZ ENVIRONNE MENT'S SOLUTIONS

## 3. SUCCESSF UL CONTRACT S IN EMERGING MARKETS

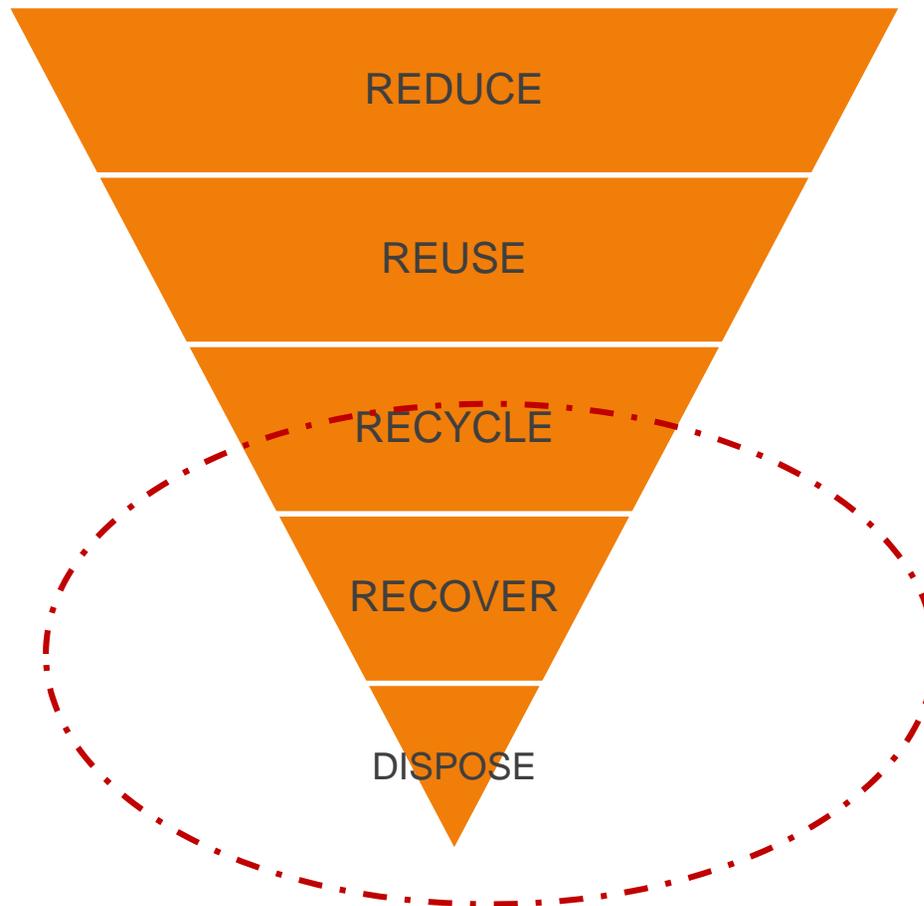
- Volume of waste grows faster than urbanization
- Composition of waste varies compared to high income countries, with a majority of organics
- Importance of informal sector
- Low income countries spend most of their Solid Waste Management (SWM) budget on waste collection rather than disposal



# FOLLOW (but adapt) THE WASTE HIERARCHY

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2. **PROPOSED  
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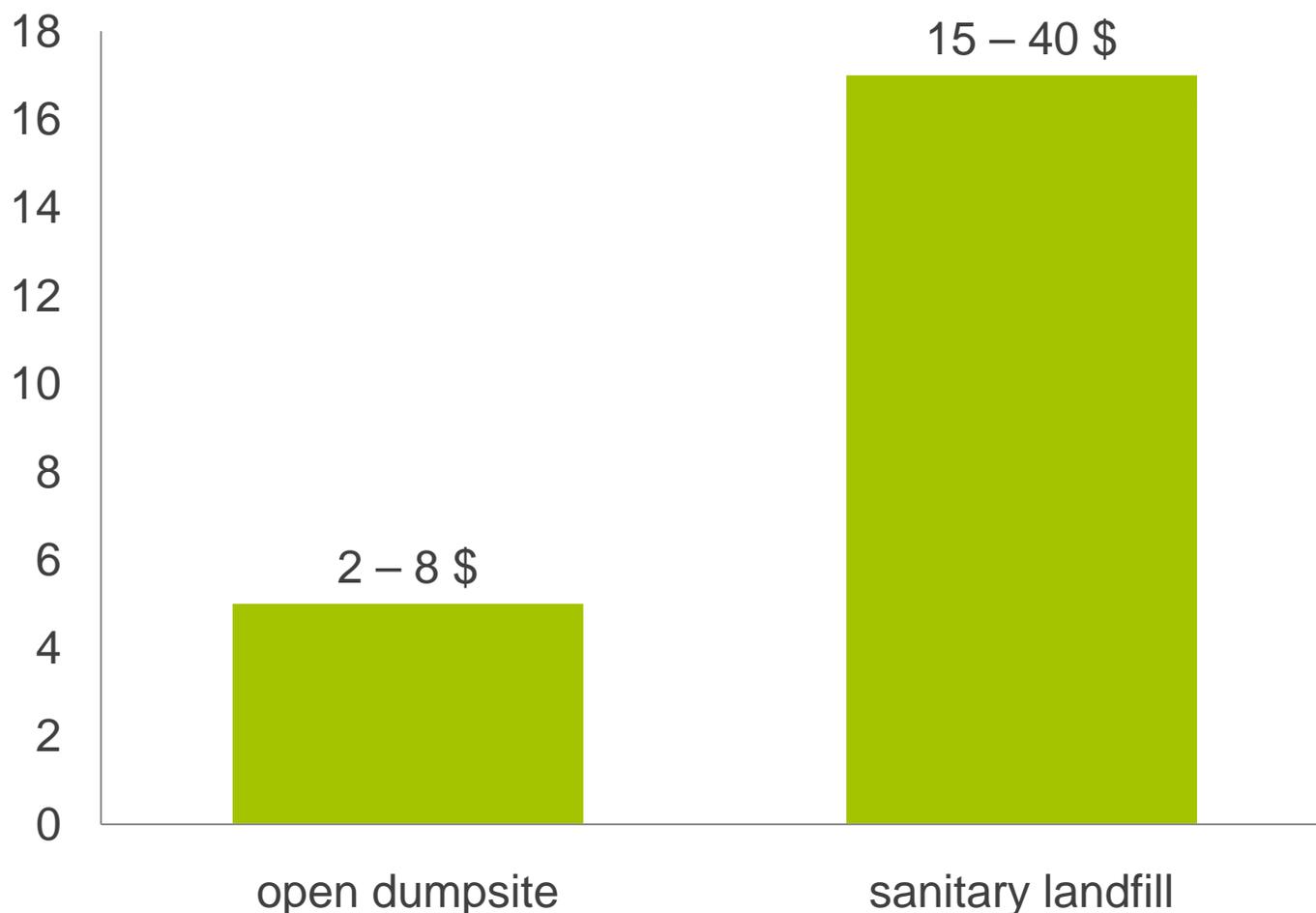
**EFFORTS SHOULD FOCUS IN PRIORITY ON RECYCLE-  
RECOVER-DISPOSE**

# INCREMENTAL COST FOR ENVIRONMENTALLY SAFE TREATMENT IS MINIMAL COMPARED TO URBAN INFRASTRUCTURE BUDGETS

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In North Africa, 7% of GDP depends on tourism

→ population benefits / Investment cost ratio is much superior than other urban infrastructure investment.  
Ex: Real Estate investments in Morocco



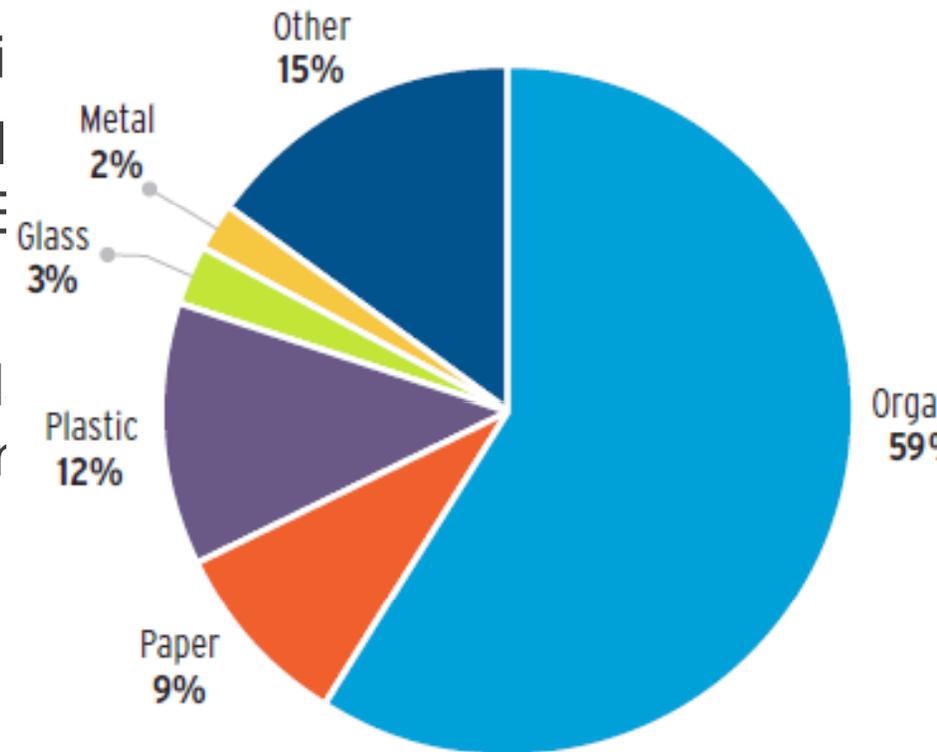
# LANDFILL / ENERGY RECOVERY PLATFORM OPTIMAZISES ENERGY AND FINANCIAL YIELDS

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- WASTE TREATMENT can contribute
  - - BIOGAS production on landfill
  - - production of SOLID RECOVERY
- Those two solutions are more adapted to EMERGING COUNTRIES than incineration (traditional Waste to Energy).



80% of waste energy potential targeted

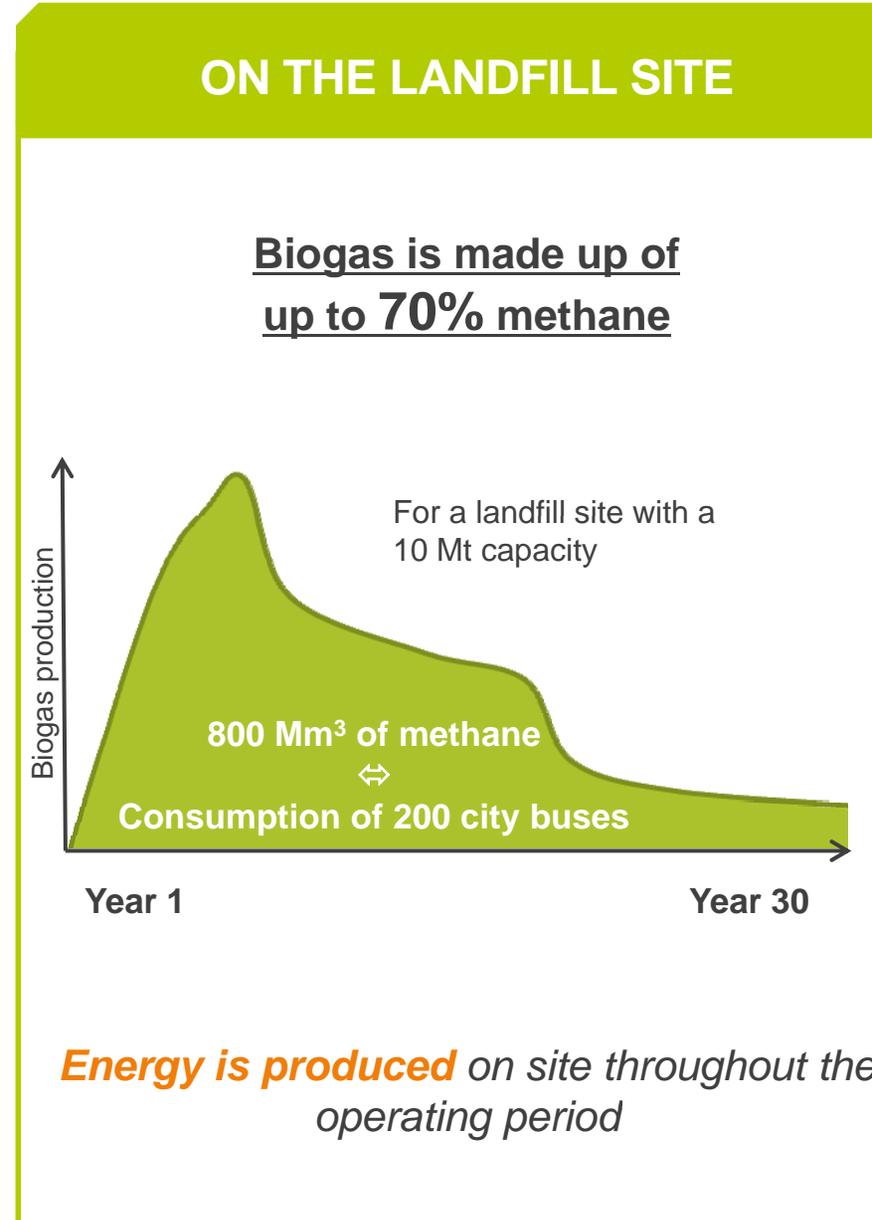
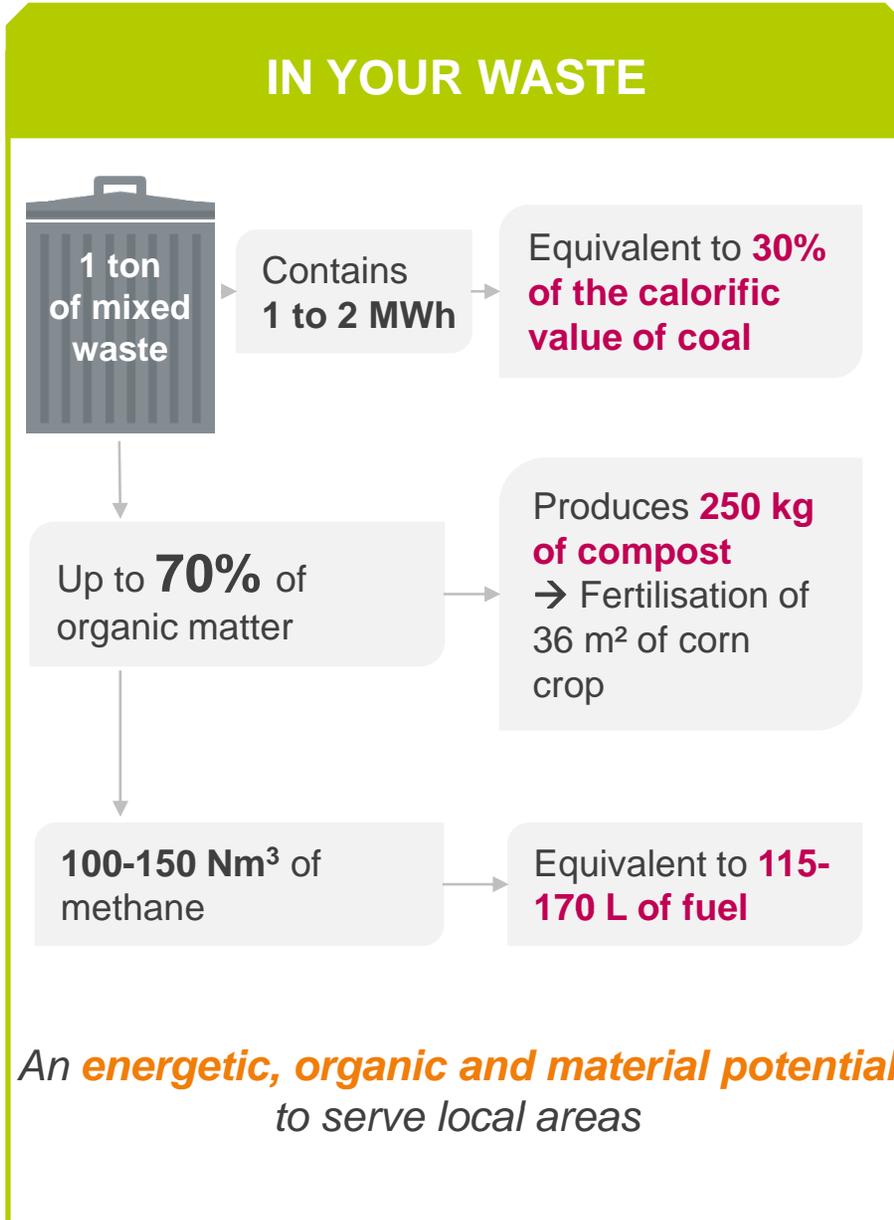


# SOLUTIONS ALLOWING MATERIAL & ENERGY RECOVERY

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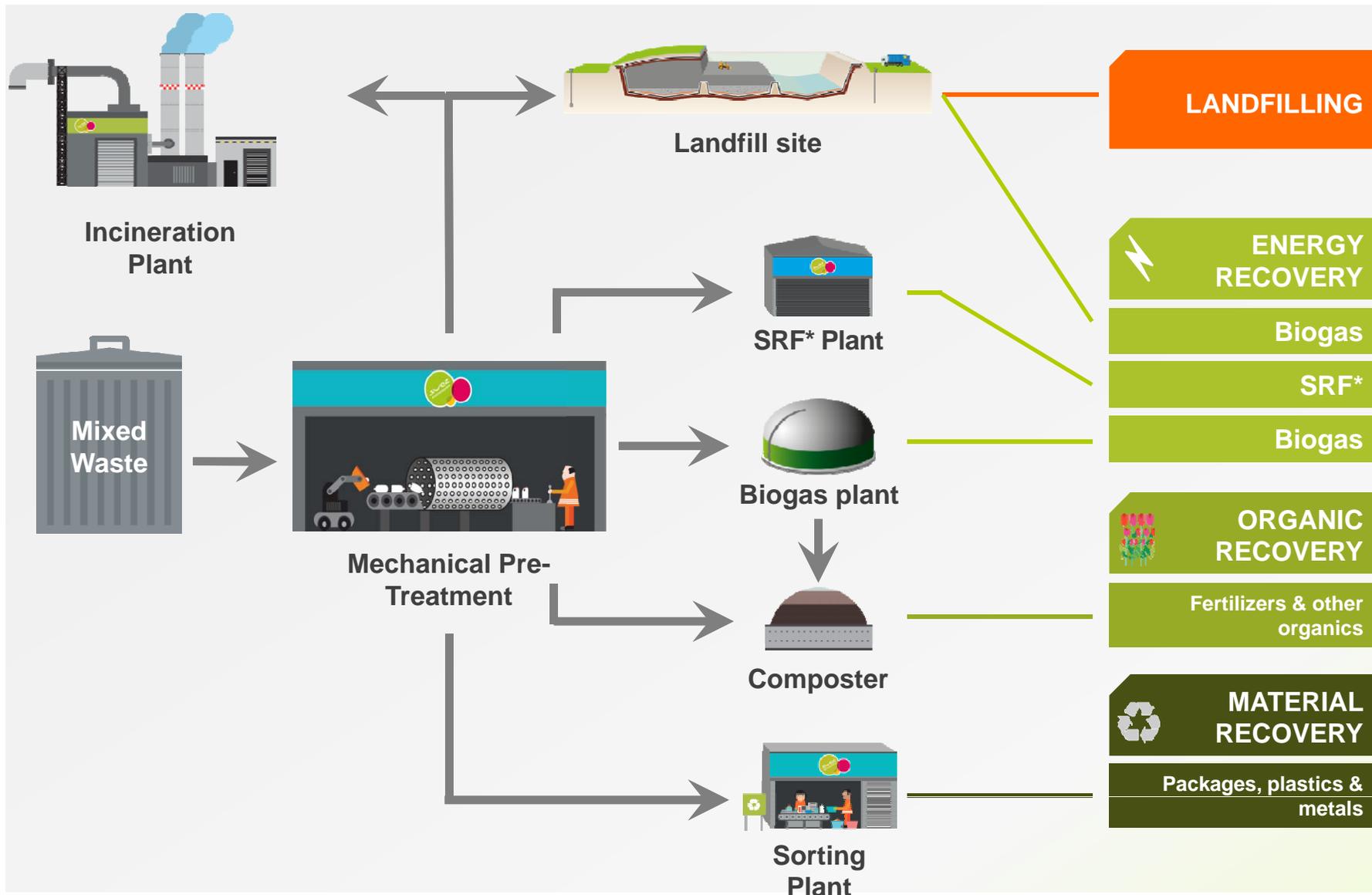


# EUROPEAN ADVANCED SYSTEM SOLUTIONS ARE EFFICIENT BUT COMPLEX

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\*SRF : Solid Recovered Fuel

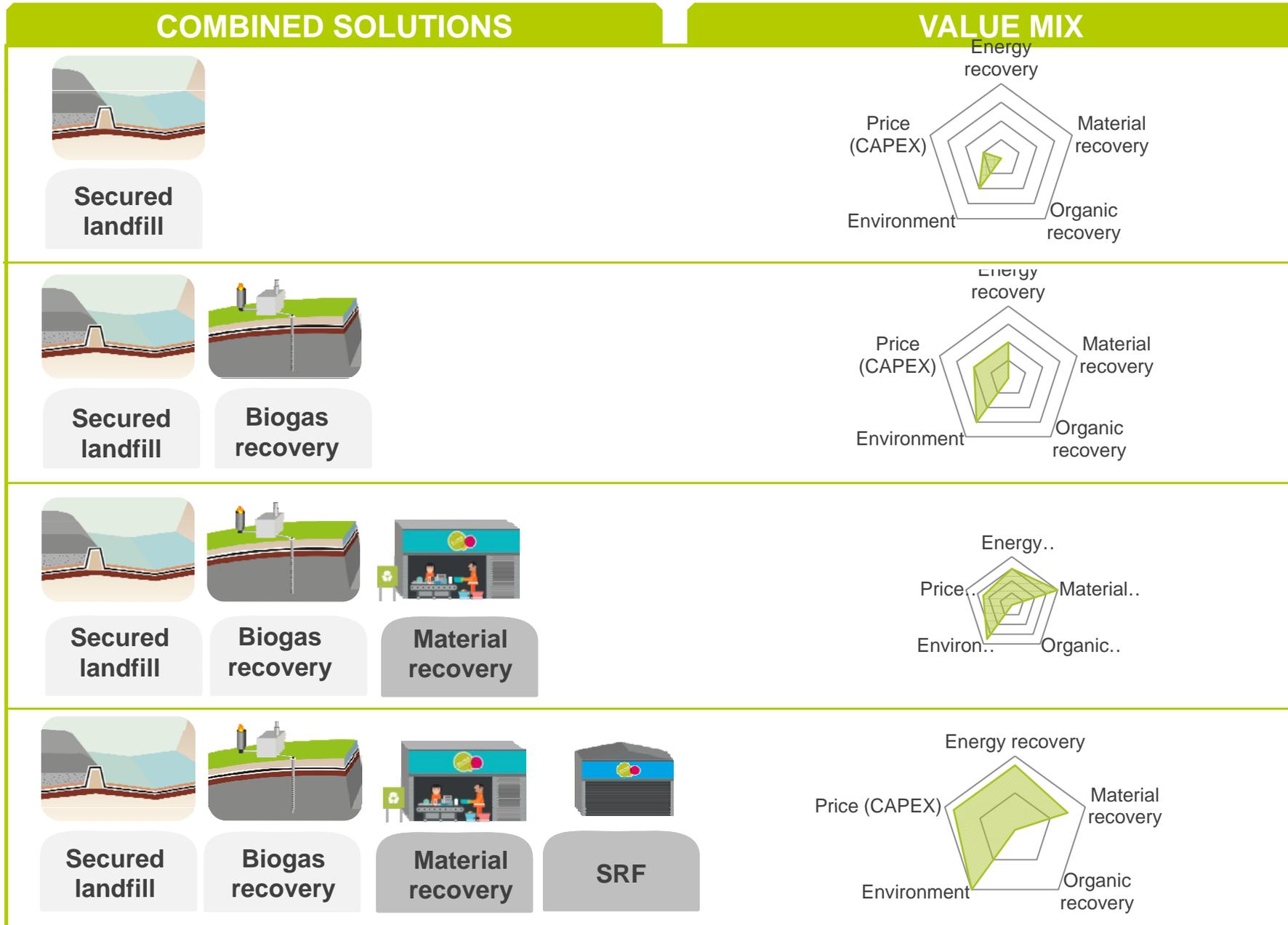


# SIMPLE AND EFFICIENT SOLUTIONS EXIST TO MEET EMERGING COUNTRIES CHALLENGES

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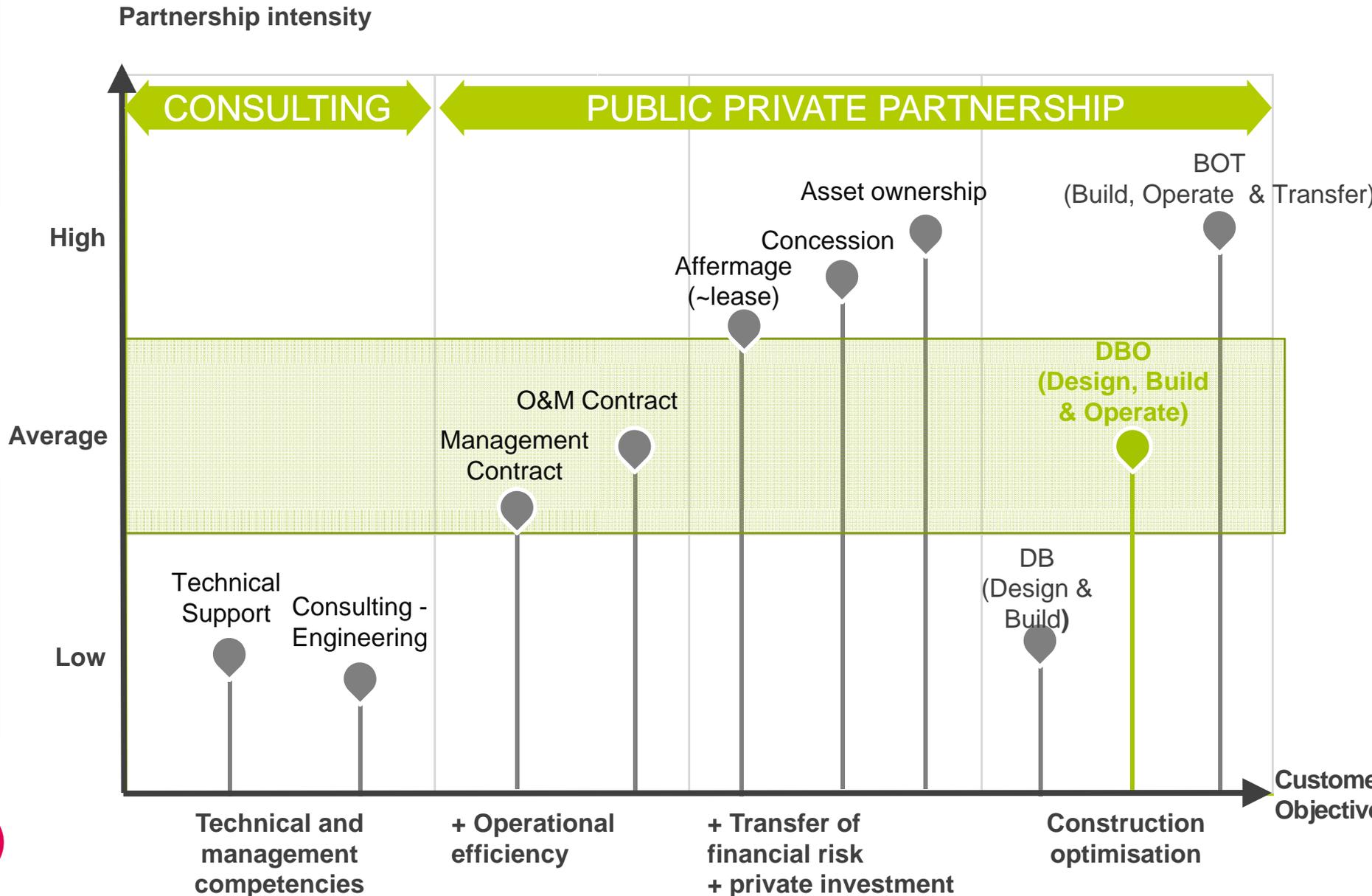


# EUROPEAN ADVANCED CONTRACTS ARE NUMEROUS BUT INADAPTED

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# DESIGN-BUILD-OPERATE IS EFFICIENT TO DELIVER WASTE SOLUTIONS

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**Local authorities face significant interface risk between Design, Construction and Operation.  
DBO contract enables them to transfer this risk to one single point of contact that will allow project to be delivered in time and in budget.**

DBO contract ensures :

- Quality of DB
- Selecting the right technology
- Optimisation of O&M costs
- Asset value maintainance

A project contracted in DB bears the risk to result in an infrastructure that the authority does not have the expertise to manage properly, or which operating and maintenance cost is too high for the client to assume.

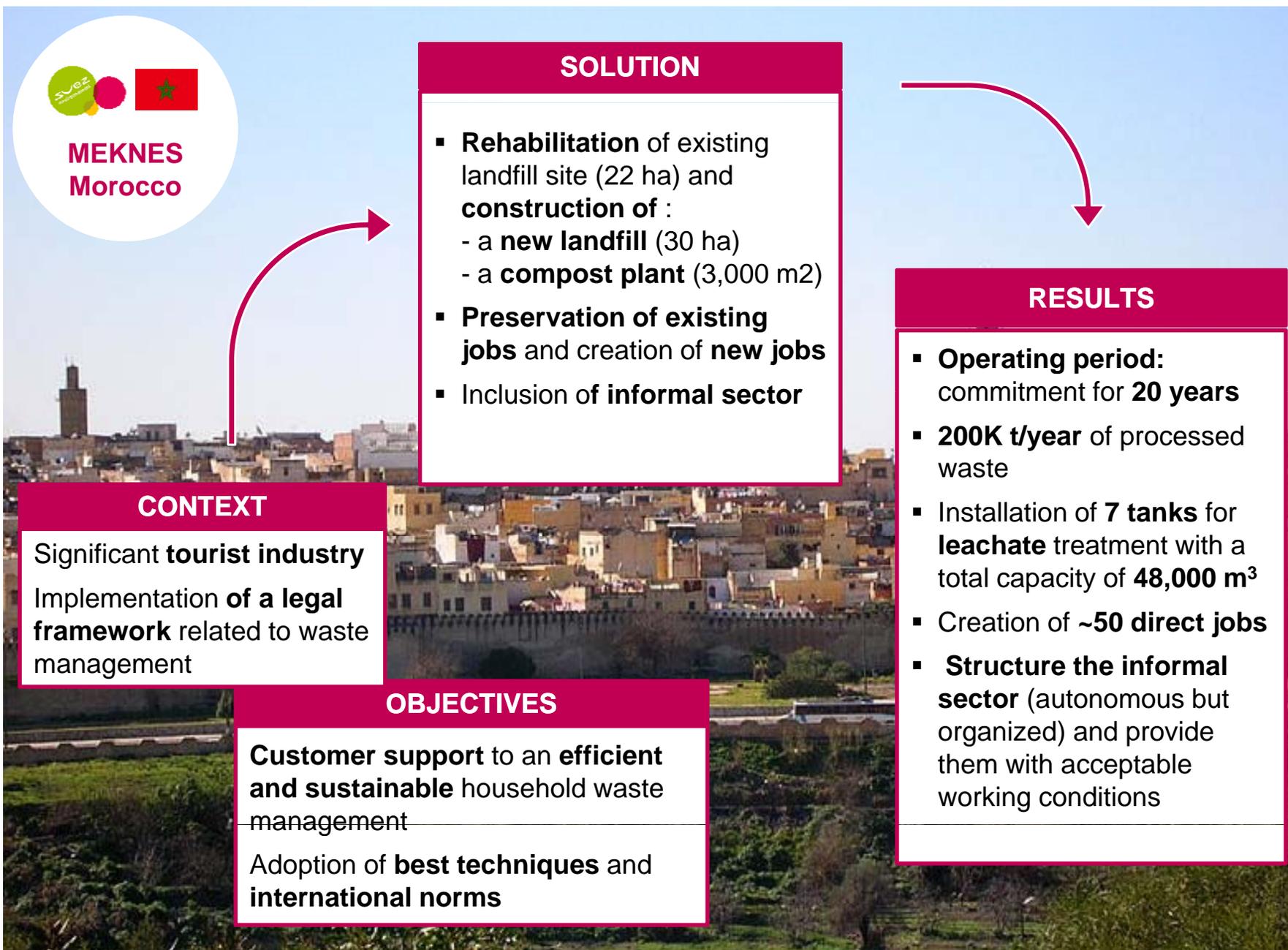


# FOCUS: LONG-TERM MANAGEMENT MEKNES, MOROCCO

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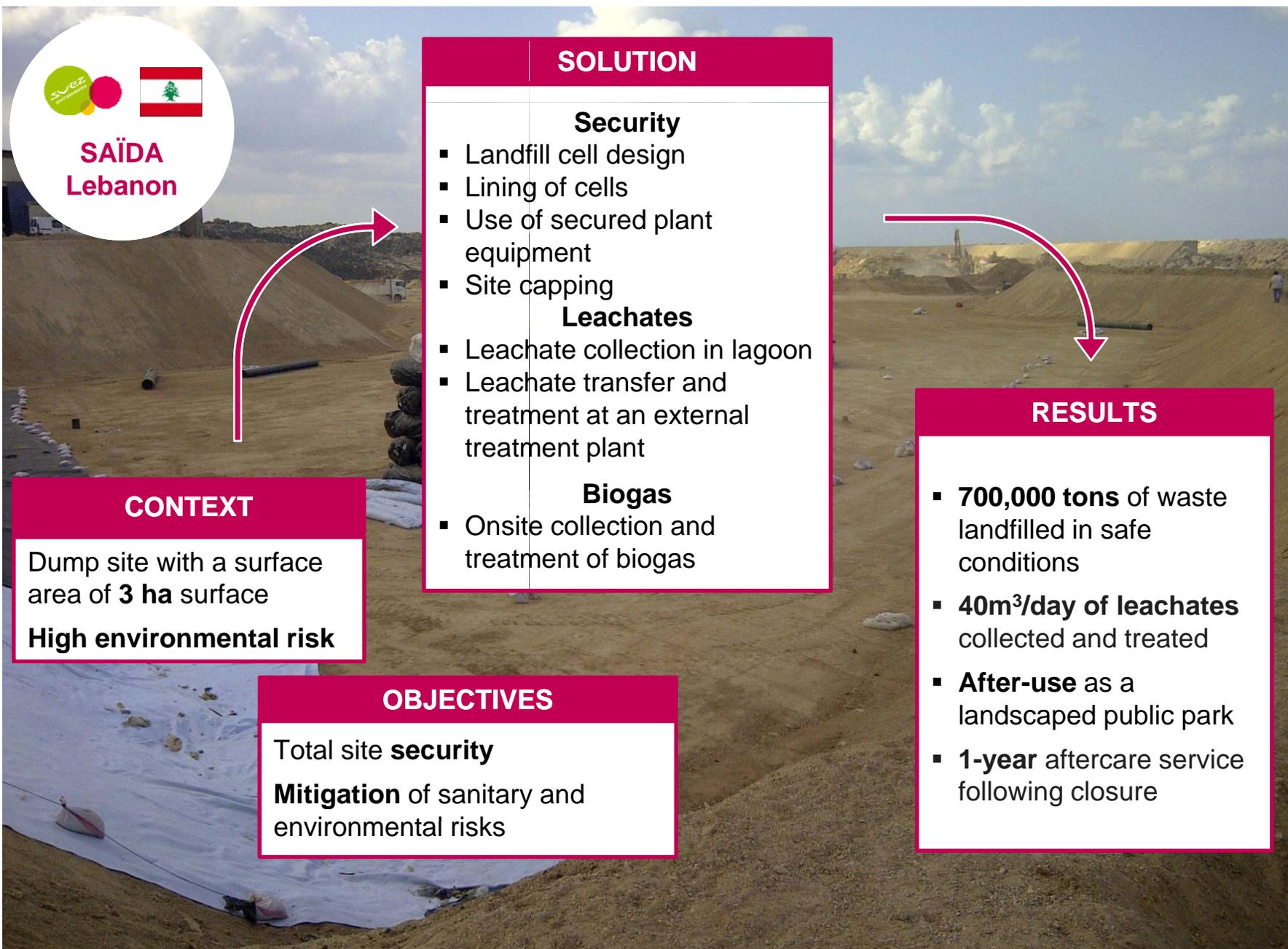


# FOCUS: REHABILITATION OF A DUMP SITE SAÏDA, LEBANON

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# FOCUS: BIOGAS RECOVERY NENT, HONG KONG

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