



# **MUNICIPAL SOLID WASTE SOLUTION TURNING LANDFILLS INTO GREEN PASTURES**



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**“Waste is merely raw material  
in the wrong place”**

**Frederick A. Talbot - 1920**

# We want to turn this !



**Into this !**



# WE WILL DISCUSS

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- Data on municipal waste and the problem of unregulated landfills
- Health and environmental risks
- Conversion of MSW into valuable organic fertiliser and burnable fuel pellets
- Zero GHG Process - patented in Europe
- Creating employment and returning land for commercial use.



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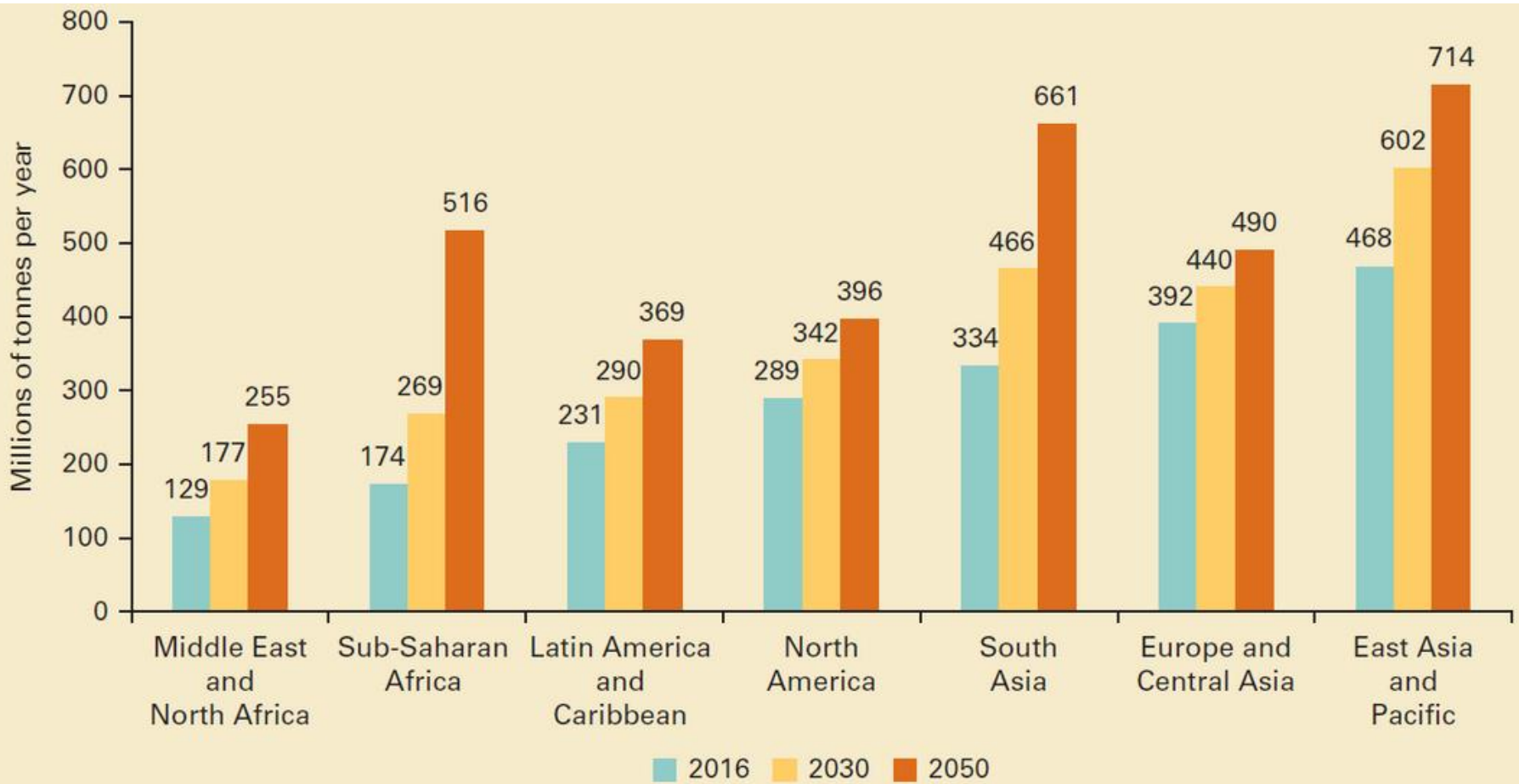


# WASTE – A GROWING PROBLEM



- The world generates 2.01 billion tonnes of municipal solid waste annually
- 33 % of that - extremely conservatively - is not managed in an environmentally safe manner
- Worldwide, waste generated averages 0.74 kilogram per person per day

Source: World Bank – What a Waste 2.0



# THE WORLD OF WASTE BY 2050

*Projected waste generation, by region (millions of tonnes/year)*

*Source: World Bank – What a Waste 2.0*

# LANDFILLS ARE NO LONGER AN OPTION



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WASTE MANAGEMENT



# THE REAL COST TO THE COMMUNITY



- Choking our living spaces
- Producing greenhouse gas emissions (GHG)
- Creates potentially deadly health risks
- Costing the community around \$30 / ton to remove

# THE PROBLEM IN SUMMARY

- LANDFILLS HAVE FILLED THEMSELVES TO CAPACITY
- TOXIC LEACHING INTO GROUNDWATER IS A SERIOUS CONCERN
- GHG EMISSIONS AND AIR POLLUTION FROM LANDFILLS AND BURNING HAVE TAKEN THEIR TOLL
- PUBLIC HEALTH IS SEVERELY AT RISK FROM UNCOORDINATED WASTE DISPOSAL METHODS
- AGRICULTURAL SOIL DEGRADATION THROUGH ORGANIC MATTER DEPLETION IS FAST BECOMING A FOOD SECURITY ISSUE
- PRESENT MANAGEMENT METHODS ARE PROVING COST INEFFECTIVE AS POPULATION AND WASTE IS INCREASING

# IS YOUR PRESENT WASTE MANAGEMENT SYSTEM SUSTAINABLE?



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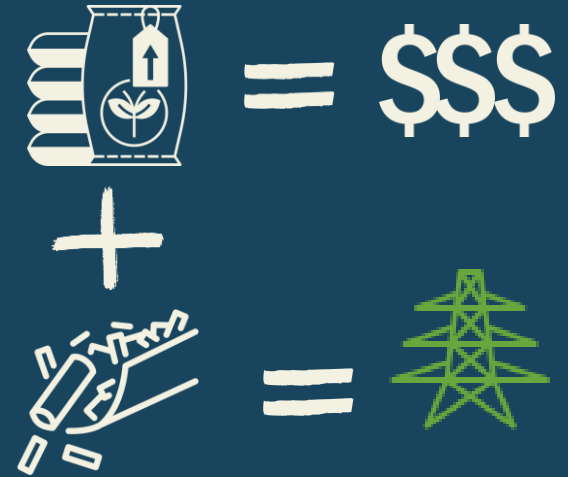
**IS IT ALREADY POSING A  
SERIOUS ENVIRONMENTAL  
AND HEALTH RISK?**



# SO WHAT IS THE SOLUTION?

Turn Waste into Resource  
Cost Effectively

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## INCINERATION

## COMPOSTING

## FERTILISER & FUEL PELLETS

REDUCES LANDFILL

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PRODUCES ELECTRICITY  
(550KW / MT OF WASTE)

EXCELLENT FOR AGRICULTURE

HIGH VALUE FERTILISER

SOURCE EPA

POLLUTES AIR (SMELL)

FUEL PELLETS FOR ZERO CARBON

CREATES EMPLOYMENT

REQUIRES OPEN LAND

INCINERATION

RELEASES AIR POLLUTANTS

LOW IN SALE VALUE

CREATES EMPLOYMENT

SUSCEPTIBLE TO WEATHER

NO AIR POLLUTION

VARIATIONS

ZERO GHG EMISSIONS



**SML'S GLOBALLY PATENTED PROCESS TURNS  
MSW INTO ELECTRICITY AND ORGANIC  
FERTILISER WITHIN 24 HOURS**



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# ELECTRICITY, FERTILISER AND REYCLCABLES

## Patented 9 Stage Process

- Cost effectively separates recyclables
- Makes Organic Fertiliser in 24 hours
- Generates electricity within 60 minutes by clean incineration of high calorific solids

**TOO GOOD TO BE TRUE?**



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# RECYCLABLES SORTING



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# ORGANIC FERTILISER

FULL BIOLOGICAL & PHYSIOLOGICAL DECOMPOSITION IN 24 HOURS



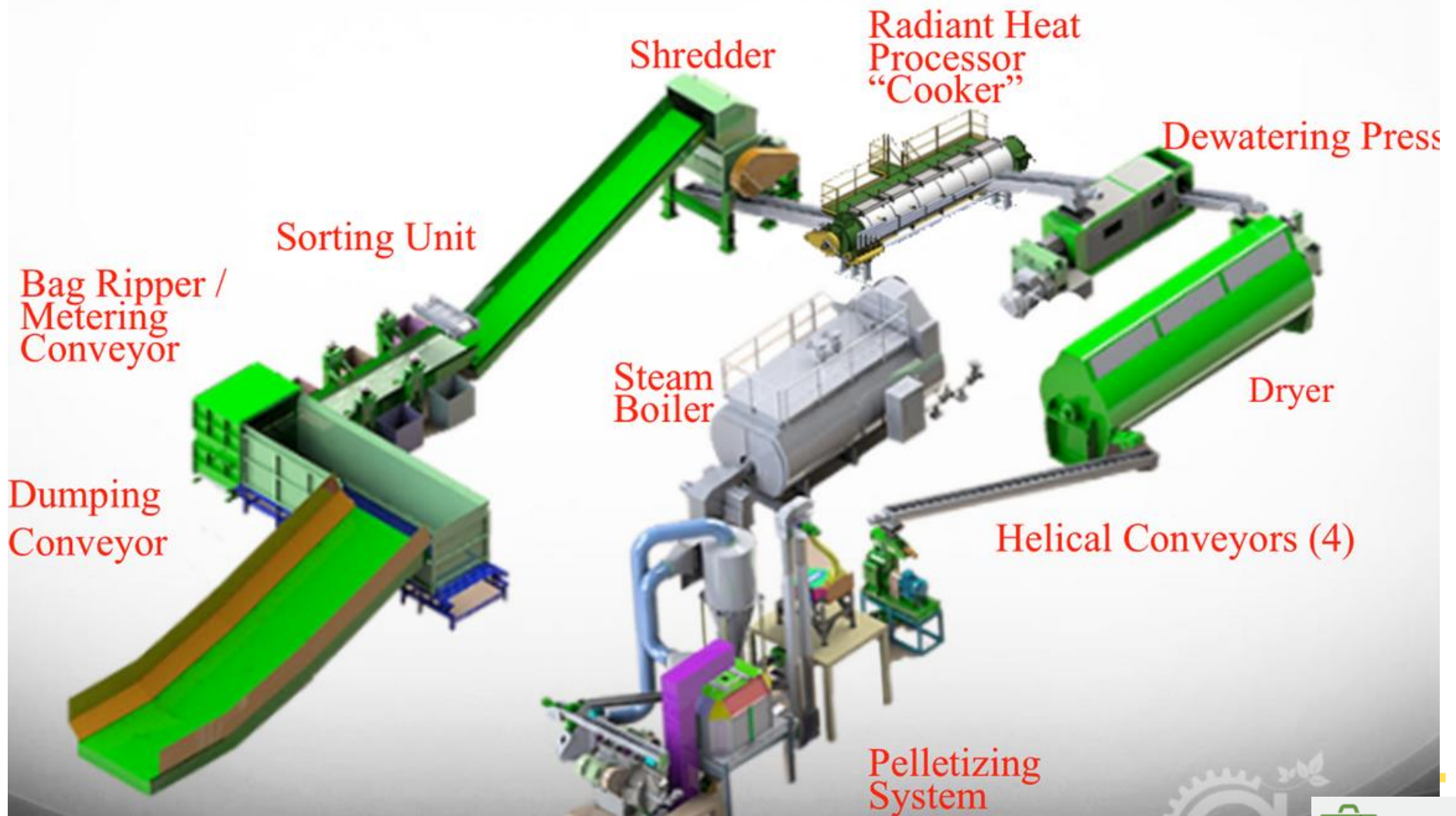


# ORGANIC FERTILISER

## ITS IMPORTANT TO NOTE

- **WHAT WE PRODUCE IN 24 HOURS IS A FULLY DECOMPOSED PLANT ORIGIN ORGANIC FERTILIZER**
- **NOT PARTLY DECOMPOSED ORGANIC COMPOST**
- **MOST OF OUR COMPETITORS REFER TO COMPOST AS FERTILIZER**

# FUEL PELLETS



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# GLOBAL FUEL TYPES COMPARISON



ITEM	COAL	DIESEL (D2)	NG	SML FUEL PELLETS
Heat Value	5000 (Kcal/Kg)	10200 (Kcal/Kg)	8700 (Kcal/m3)	4300 (Kcal/Kg)
Boiler Efficiency	74%	88%	88%	80%
Density (kg/m3)	~ 1250 (kg/m3)	~ 850 (kg/m3)	0.74 (kg/m3)	~ 980 (kg/m3)
CO2 (g/kg)	1.78%	3.06%	1.96%	<0.1%
SO2 (g/kg)	0.50%	3.25%	/	0.07%
Nox (g/kg)	2.94%	3.67%	1.87 (g/m3)	<1.0%



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# SML WASTE MANAGEMENT SOLUTION - **SALIENT FEATURES**

- Result of 20 years of multi University R & D Projects
- Based on time-tested process
- Ecologically sound system
- Internationally Patented Technology and EU Engineering
- Enhanced by new innovation and proven for MSW applications
- Fast to manufacture, transfer and build
- Resilient and simple system to operate and maintain
- Effective stand-alone machines or can be integrated into existing Waste Management Systems
- New Sector Employment creation



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# SML WASTE MANAGEMENT SOLUTION - **BENEFITS**

- Substantially reduces Green House Gas (GHG) Emissions
- Eliminates landfill requirement
- Significant reduction in health risks to the community
- Proven to kill all harmful bacteria and foul odours
- Significant reduction in costs of MSW management
- The Organic Fertiliser produced is certified and accepted by EU and USA standards
- ROI 2-3 years - depending on scale



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# READY TO TAKE A CHALLENGE ?

## 12 MONTHS TO GO FROM

**THIS**

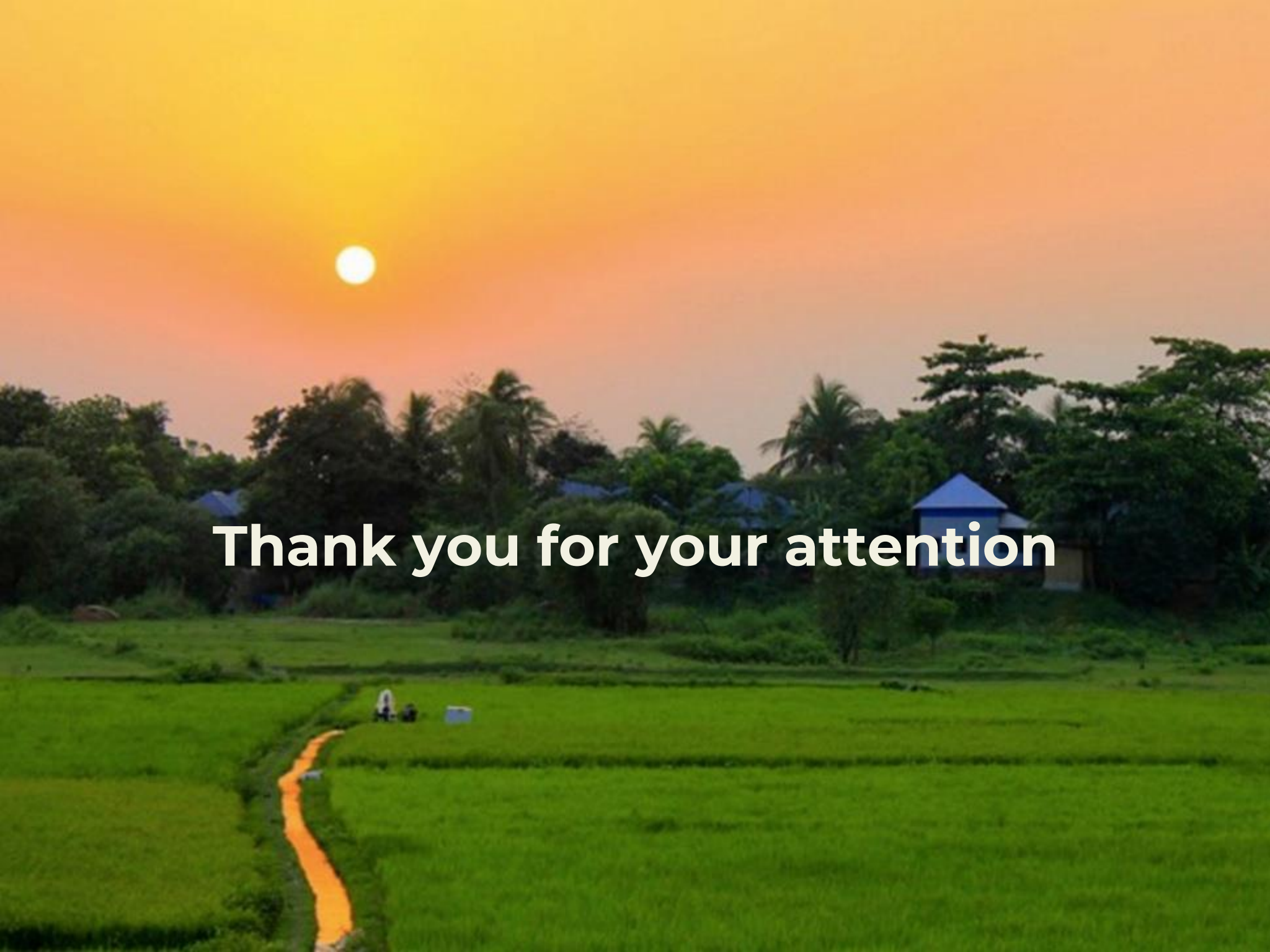


**TO**

**THIS**





A scenic landscape at sunset. The sky is a gradient of yellow and orange, with a bright sun in the upper left. In the foreground, there is a lush green field with a narrow, winding path that appears to be illuminated or has a different texture. In the middle ground, there are several trees and a small blue-roofed structure. The overall scene is peaceful and natural.

**Thank you for your attention**

# ABOUT SML

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## SML LONDON WASTE MANAGEMENT LTD

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# Dr **SINAN OGUN** **Patent holder**

Managing Director SML Waste Management, Bratislava, Slovakia  
Sustainability Director at Rural Revival Research (RRR) - Turkey

- PhD. Agricultural Botany – Palynology **1997-2000** \*Rotary Ambassadorial Scholar
- Post Grad. M. Phil. Eco-Design – **2010-2013**
- PhD. Animal Science – Welfare – **2003-2006**
- Outstanding academic achievement in the fields of agriculture, botany, horticulture and environmental education;
- Over 20 years training and teaching experience on Sustainable Agriculture and Conservation using a broad range of methodologies as well as writing curriculum;
- Chairing, establishing or advising numerous agri-business groups in Australia, Turkey, USA, China and England;

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