



# Benefits of ISWM

## Learning from UNEP Experiences



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# Benefits of ISWM



Resource augmentation and higher resource use efficiency

Improved Efficiency of waste management and savings in costs

Better business opportunities and economic growth

Cleaner and safe neighborhoods

Local ownership & responsibilities / participation

*Turning vicious circle into virtuous circle*



# Resource Augmentation

Increased availability of materials, especially non-renewables such as metals, glass, plastic.

Additional availability of renewable energy sources (e.g. from bio-methanation of organic waste)

Enhance recovery of scarce/precious metals e.g. from recycling of E-waste

Increased feasibility of decentralized energy production thus fulfilling local demand in areas not fed by centralized systems such as rural areas

Reduced footprint of material and energy consumption

Feasibility of holistic system for resource use optimization (economies of scale) at each stage of waste management (collection & transportation, transfer station and material recovery, treatment and resource recovery and final disposal)



# Improved Efficiency of Waste Management and Savings in Costs



Reduced amounts of residual waste (waste remaining after reuse/recycling) can result in reduced investments and bring savings in collection/transportation, treatment and disposal costs

Integrated consideration of all waste streams and all stages of waste management leads to higher systemic efficiency

Extended life of landfills

Simpler and easier waste treatment/disposal due to better segregation

Overall reduced costs could help ease the burden on public (waste fees) and government (subsidies)



# Better Business Opportunities and Economic Growth



Increased economic opportunities for service providers at each stage of waste management i.e. collection & transportation, transfer stations, treatment (biological and thermal), and final disposal

Increased amount of recyclable waste available to support businesses in recycling and businesses based on recycled materials

Possibility of establishing new business in resource recovery (energy and compost), resource augmentation to provide jobs and economic growth



# Cleaner and Safe Neighborhoods



Improved public health and reduced incidence of sickness related with waste / accumulation of waste

Reduced impact on environment from seepage of leachate into soil and ground water and green house gas emissions and air and water pollution from waste

Reduced risks /nuisance from vectors and rodents

Improved aesthetics with consequent benefits such as increased value of property

Clean and healthy living environment



# Local Ownership and Responsibilities / Participation

Greater opportunities for small-scale and local service providers due to matching size of the activities at each stage of ISWM

Ownership and accountability of Local government

Ease of interaction and better achievement of aspirations of stakeholders in waste management such as waste generators, service providers, government, recyclers, and community and thus better responsibility sharing

Development and establishment of systems which have higher acceptability of all stakeholders



# Learning from UNEP Experiences



## UNEP Projects on ISWM:

ISWM Plan for Wuxi New District, PRC

ISWM Plan for Pune City, India

ISWM Plan for Maseru City, Lesotho

ISWM Plan for Matale City, Sri Lanka



# WND: Resource Recovery



## Resource recovery through segregation and efficiency through waste reduction

### Short-term Targets (2006-2010)

10% reduction in waste generation

70% of organic wastes are segregated

100% of hazardous/toxic wastes are segregated

100% collection of all wastes generated

### Long-term Targets (2011-2020)

30% reduction in waste generation

100% of organic wastes are segregated

Projects	2010	2020
Awareness raising tools for waste management for source segregation and separate waste bags for food waste	10% 39 tons/day	30% 168 tons/day
Up-gradation of transfer stations for material recovery	30% 105 tons/day	60% 240 tons/day
Development of biogas plant for organic waste	50% 150 tons/day	80% 350 tons/day



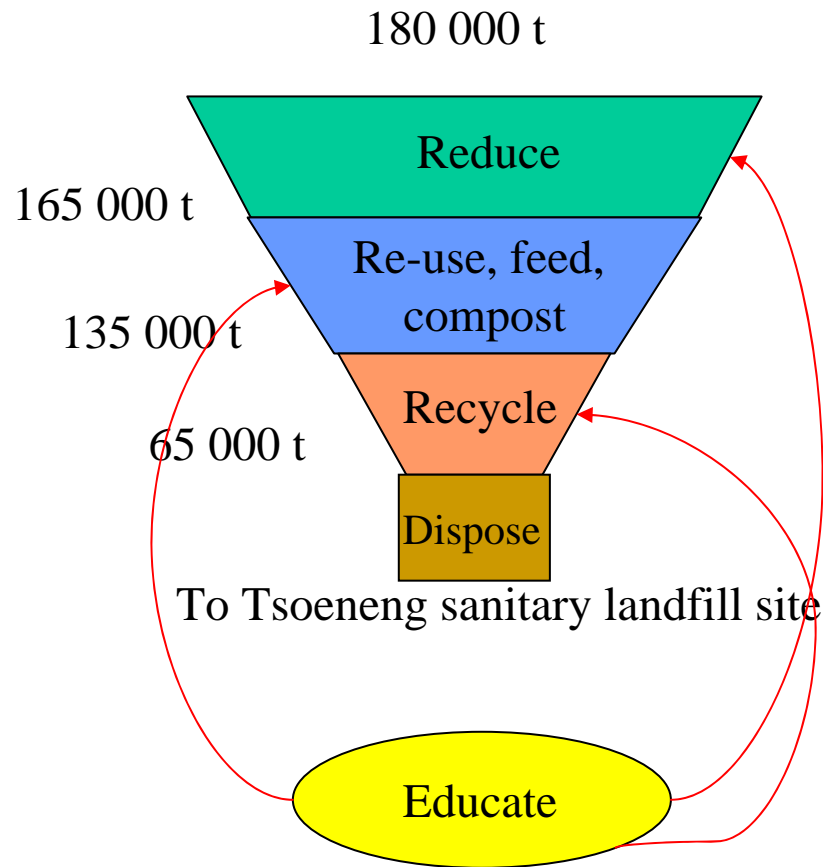
# Pune: Resource Efficiency



Projects	2010	2020
Awareness raising centre and community initiatives for source segregation	5% 60 tons/day	10% 120 tons/day
Public private partnerships in waste collection and sorting	10% 120 tons/day	30% 180 tons/day
Establishment of decentralized composting plants	10% 120 tons/day	30% 180 tons/day
Decentralization plants for hotel waste management to generate biogas and compost	100 tons/day	400 tons/day
Pilot projects for reuse and recycling of C&D waste	20 tons/day	50 tons/day



# Maseru: Resource Recovery



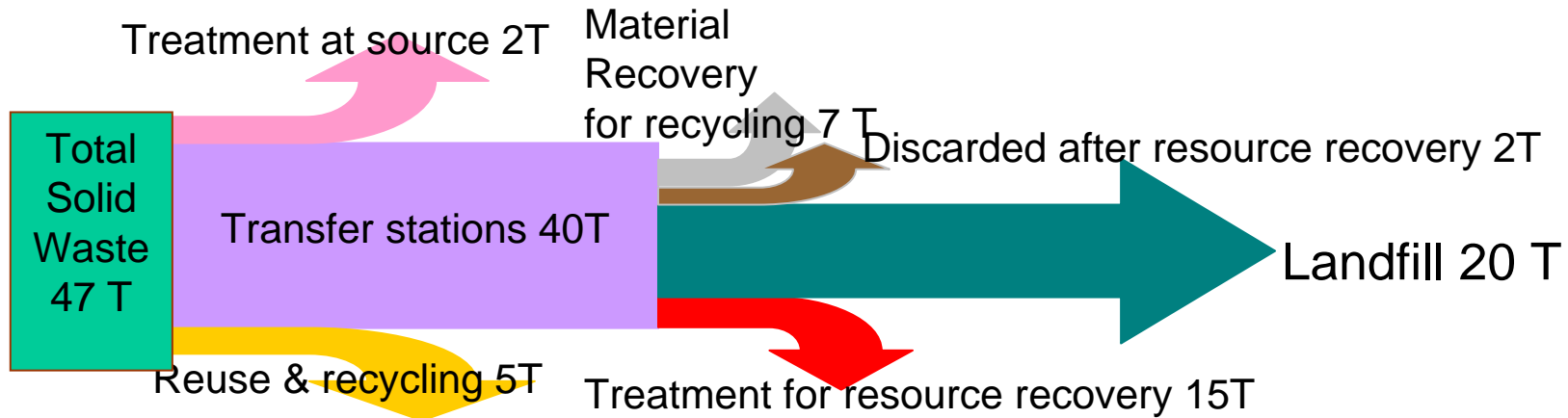
Projects	2010	2020
Integration of waste prevention measures and introduction of cleaner production measures	5,000 tons/year	15,000 tons/year
Source separation, ward specific and material specific collection system	10,000 tons/year	30,000 tons/year
Policy framework, private sector participation and support for local recycling centres	30,000 tons/year	70,000 tons/year



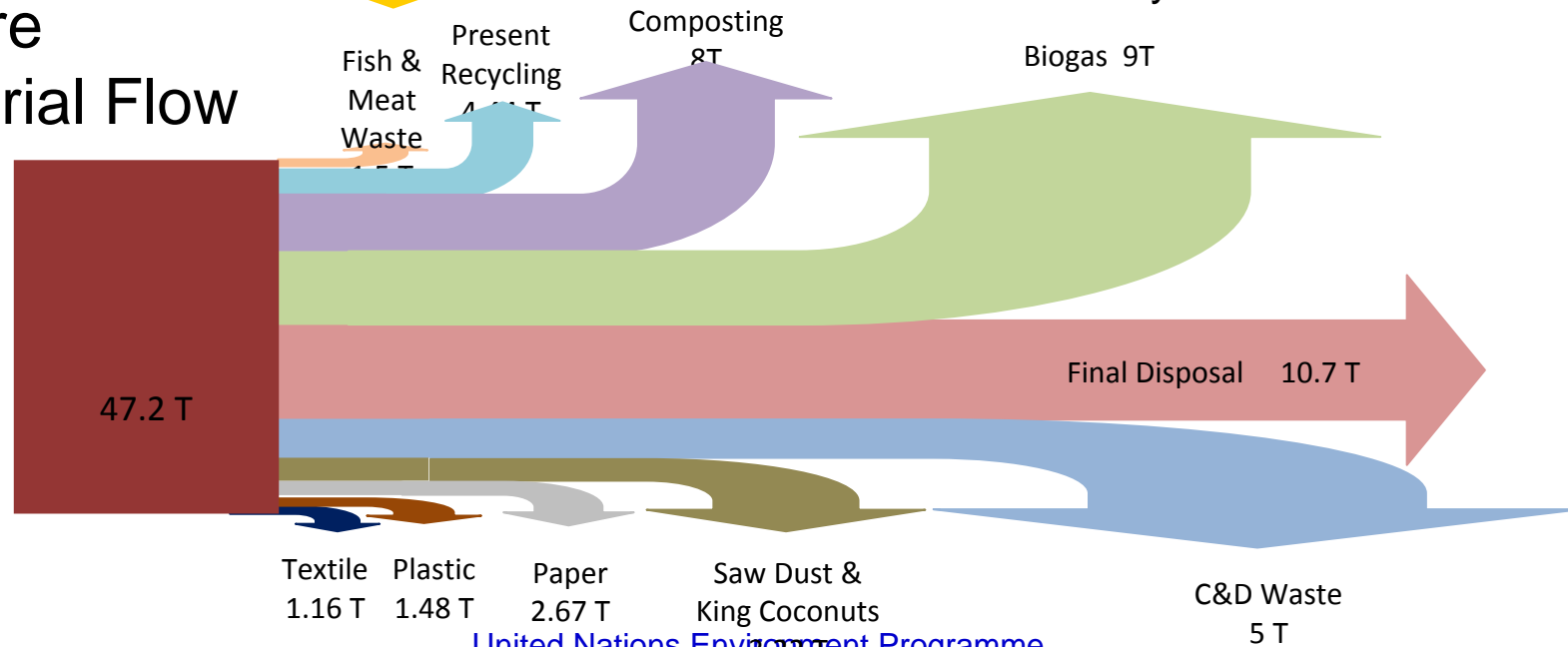
# Matale: Resource Efficiency



## Existing Material Flow



## Future Material Flow





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***Thank You...***

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