



Living Sustainably for a Cleaner World

The 2016 Earth Day Forum

*Living in Harmony with Nature through 4Rs
Reduce, Reuse, Recycle and Renewables*

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Outline

- *Answering the “Why” Question – Existential Imperative*
- *Addressing the “How” Question – Living the 4 Rs*
- *Practical Ways to live Harmoniously*
 - *Reducing Waste*
 - *Potential Nature-Friendly Solutions*
 - *Deployment and Education*
 - *Renewable Energy Village*

The Why (& Why Now)

- *Stewardship*
 - *Human Beings have no predators in the cycle of Life*
 - *We are care-takers of the environment*
- *Timing*
 - *Over Population*
 - *Climate Change*
- *Resource Constraints*
 - *Food*
 - *Water*
 - *Energy*

It is Imperative for Human Beings to be in Harmony with Nature to Exist as a Species

The HOW (The 4 "R"s)

There needs to be a fundamental shift in Human Outlook from Conquest to Conserve

- *Reduce*
 - *Take only what you need - Give more than you receive*
- *Reuse*
 - *Take the "Multi-tasking" mindset to "Multiple-Tasking"*
- *Recycle*
 - *Solution for resource constraint – Use Efficient Technologies to Recycle*
- *Renewables*
 - *Renewable Energy– Solar, Wind, Geo thermal, Hydro, Biofuels and Chemicals*

REDUCE THE DRAW-DOWN ON MOTHER NATURE'S ACCOUNT BALANCE

Deployment Models

- Simple devices given for free or subsidized
- Training to use household tools and everyday articles for home use
- Market launch of pilot projects with grass-root support and volunteers/charity/
- Microfinance support
- Energize Youth (Rural/ Urban)

Devices for
Homes

Units for
Communities

Rural and Urban
door-to-door
training

Pilot Runs and
Prototypes

Maintenance
Training

Non-profit
market launches

The Problem... The Approach... and The Solutions

Tech Kriti- Feb 2016 (at IIT Kanpur)
Presented by Ms. LATHA R
GOVT. PU COLLEGE FOR GIRLS.
Viveka Scholar Program (SVYM Initiative)
MALLESHWARAM, BANGALORE
SV002B5206 POOL-B
BANGALORE

Environmental Effects

1. Surface water contamination
2. Soil contamination
3. Pollution
4. Leachate

Economic Effects

1. Increased Cost of Societal Health/Municipal wellbeing.
2. Loss of Recycling revenue opportunities
3. Rapid use of natural resources
4. Unable to use opportunities to engage in new technologies, create jobs.

Resources

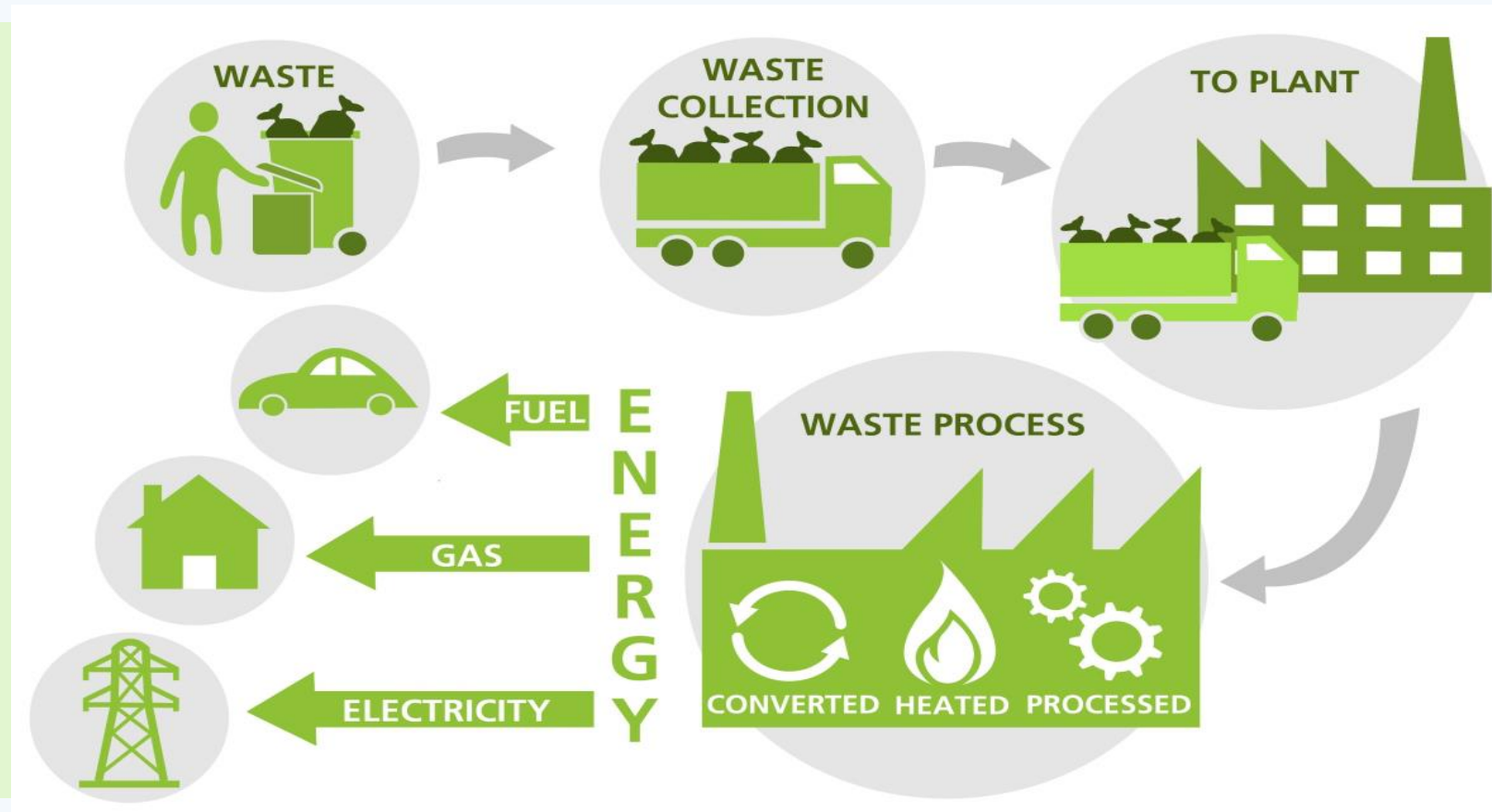
- ✓ My Father was my main support since from Round 1
- ✓ Dr. Amar Anumakonda, Engineer, Chicago, United States
- ✓ Miss. Hemalatha, Bachelor of Engineering, Mr. Mallikarjun, Mr. Avinash, Mrs Jyothi Lakshmi-My Teachers
- ✓ Website Source: Karnataka State Pollution Control Board
- ✓ MoEF: Ministry Of Environment and Forest GOI, UPPCB
- ✓ Motivated people to raise their voice against waste problem.
- ✓ Conducted Waste segregation Awareness sessions for residents, Students, housekeeping staff

OBJECTIVES

- Waste management has become a biggest challenge for our city & Nation.
- Addressing Waste Management is crucial, especially in emerging nations like India as the infrastructure to handle waste is not well developed.
- Waste management is important because improperly stored waste can cause health, safety and economic problems for the society and the nation.
- Bangalore has been transformed from the reputed “Garden City” to “Garbage city”.

Waste Management Process

Waste Management encompasses the entire process of identification, collection, transportation, recycling and finally, conversion of both solid and liquid waste material

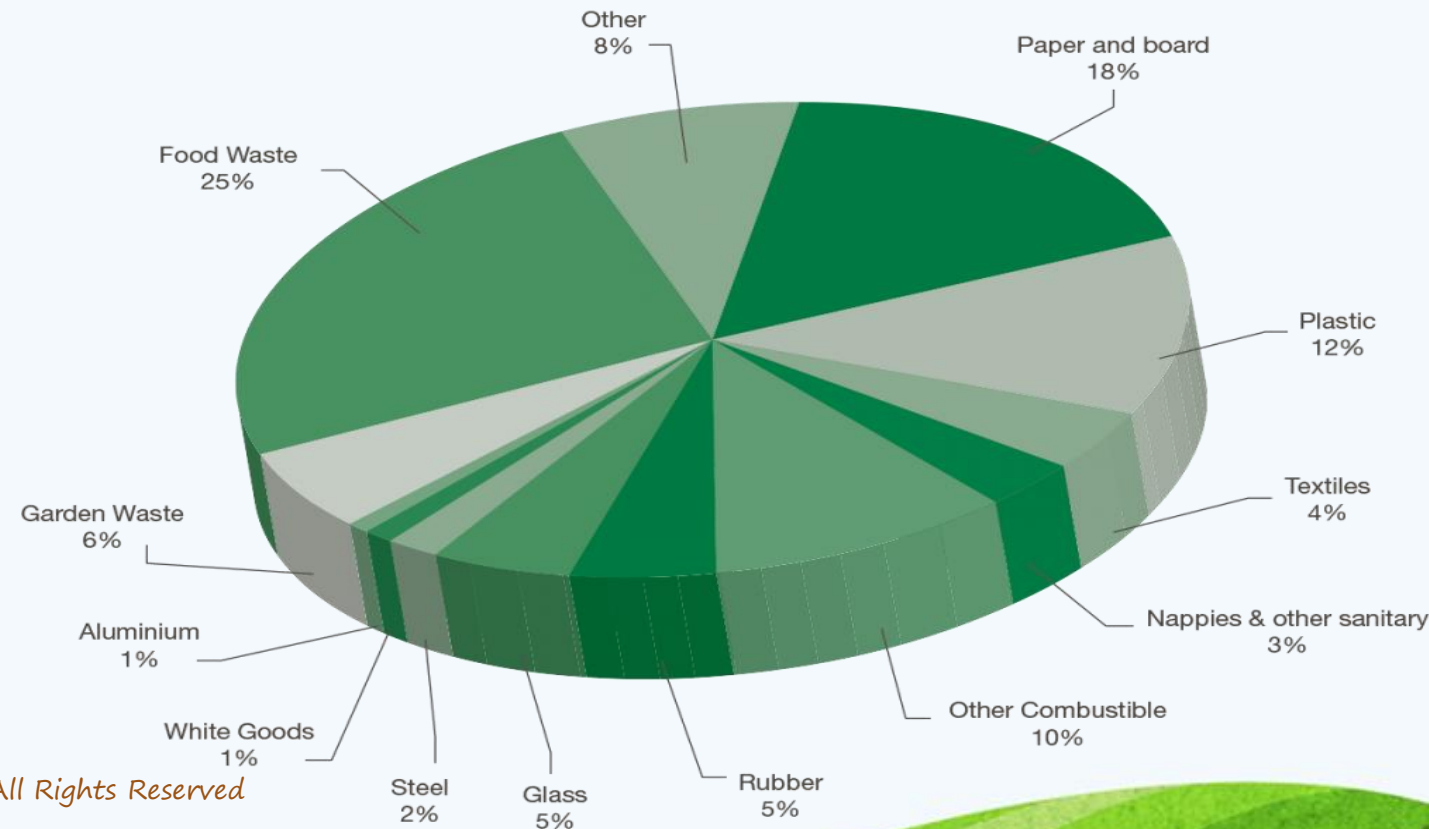


TYPES OF WASTES

Food waste, Kitchen waste, Chemical waste, Sewage sludge, Medical waste, and many more types of industrial and residential wastes

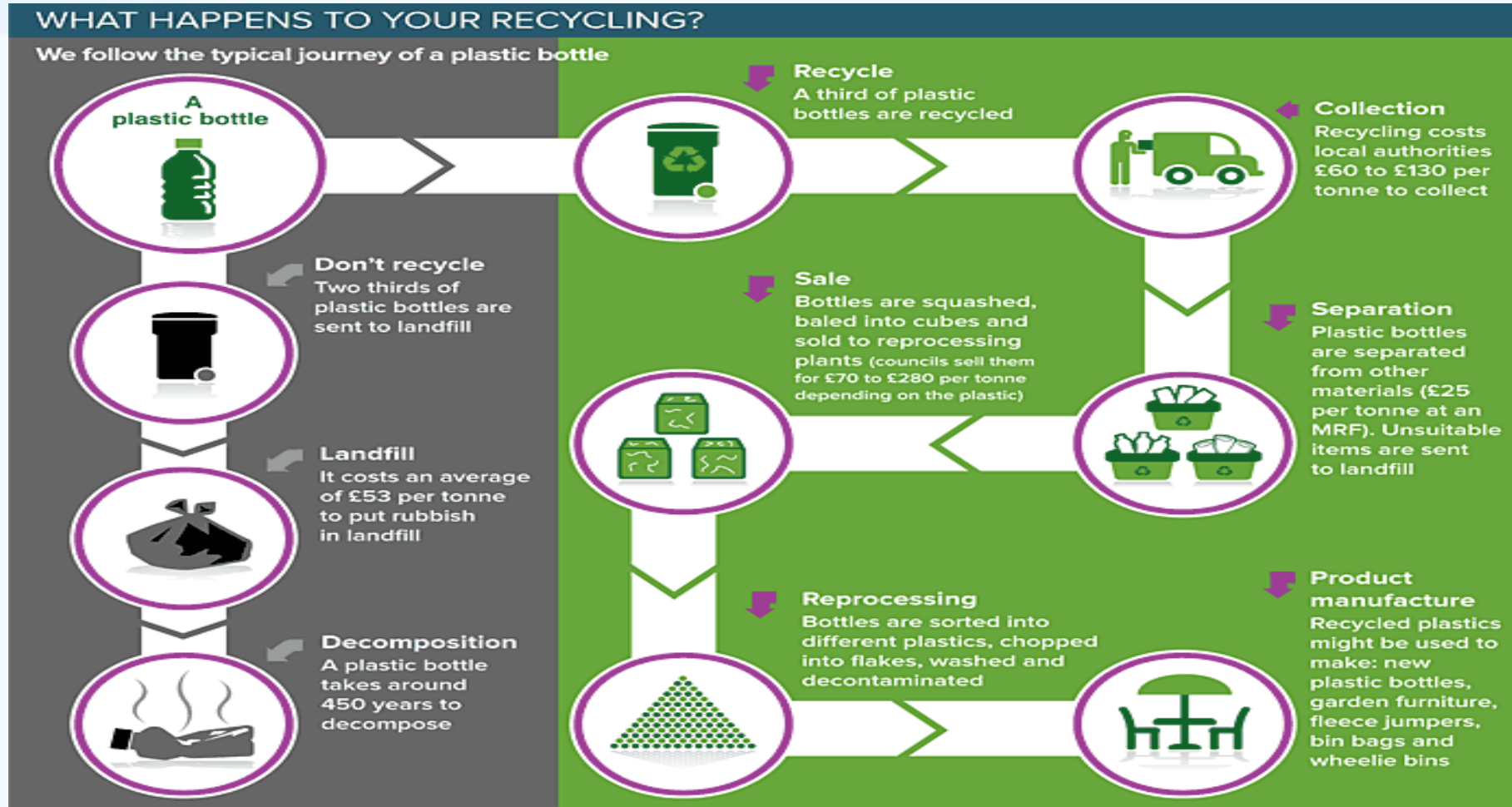
Majority of wastes in home

- Plastic
- Organic waste
- E -waste
- Hazardous waste
- Sanitary waste,
- Liquid waste.

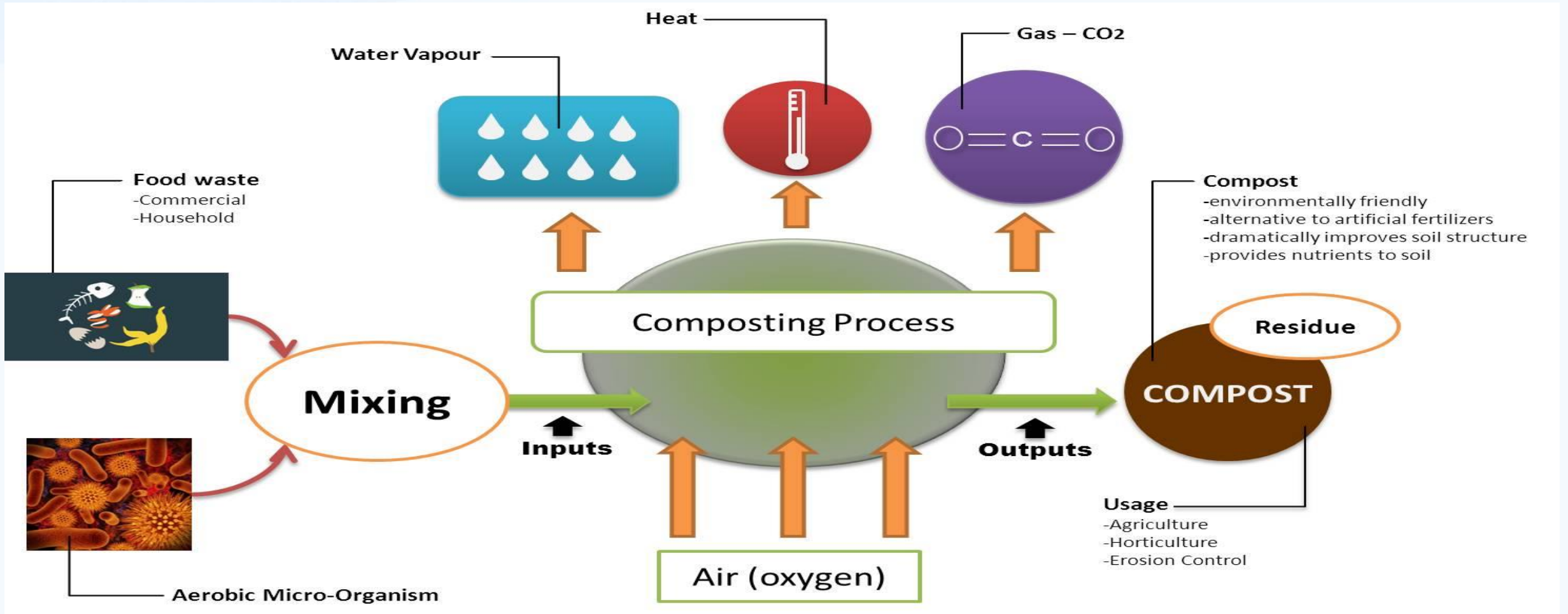


Effective Waste Management can make Earth a safer place

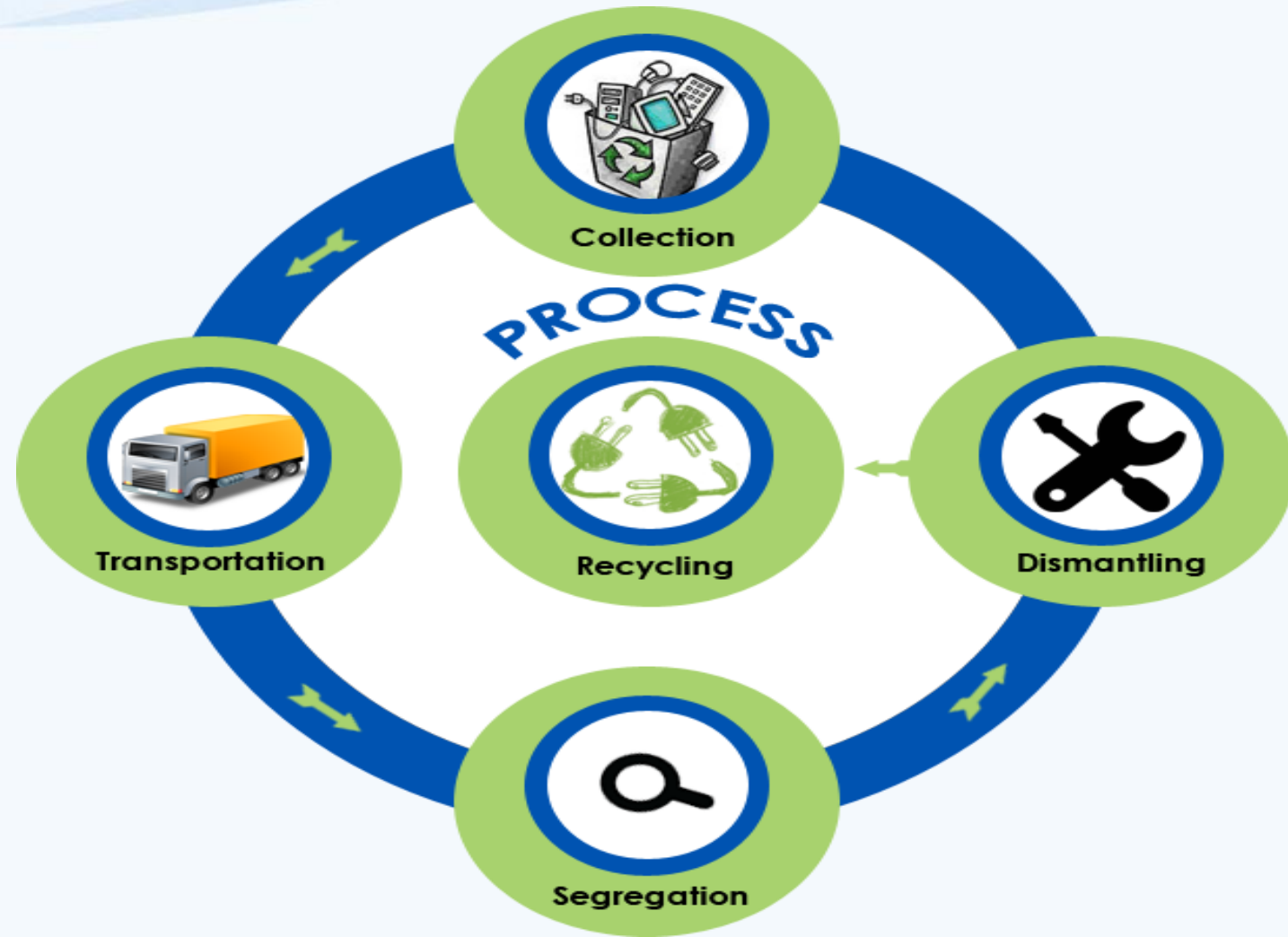
The Recycling Solution



Methods to Manage Organic Wastes



Methods to reduce e-Waste



Home made Products from Reusable Waste



Reusing:

- Saves Money
- Creates Jobs
- Eliminates Landfill waste
- Benefits the Environment
- Reduced infections and diseases



Potential Nature Friendly Solutions

- Low Capital and Operating Cost Solutions
- Ownership at the user level
- Open source technology, allowing innovative adoption by users

	Homes	Companies/B uildings
Water Purification	Growing water cleaning algae and plants on supported membrane units	Large scale retention, algae harvesting, biofuel production
Concentrated Solar Power	Aluminum foil solar cookers, baking ovens, tandoori ovens-On Balconies or Rooftops	Refrigeration cycles and heat engines running on CSP generated steam
Friction Harvesting	Dynamos on cycles, attached to car/scooter wheels	Regenerative braking mechanisms using springs for vehicles, trains, bicycles
Wind Power	Mini windmills On Rooftops to provide cooling and grinding	High efficiency turbine designs coupled with low cost potential energy storage systems
Drinking Water	Devices to collect potable water from overnight Dew	Adsorbent and membrane technologies to complement or displace RO membranes
Rain Water Harvesting	Cascading barrel designs to capture and re-use rain water from high rise apartments and buildings	Robust, lightweight rainwater catch and purification systems, scale-able up to community/village use

THE RENEWABLE ENERGY VILLAGE

One potential Vision of a greener and cleaner planet Using local, low cost, natural materials, providing power and water where it is most impactful, and needed...

