

# Solid Waste Management Strategy for Sahiwal

**By:**

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*The Urban Unit - Lahore*

# Overview of the Waste Sector:

## *Where We Need Interventions?*



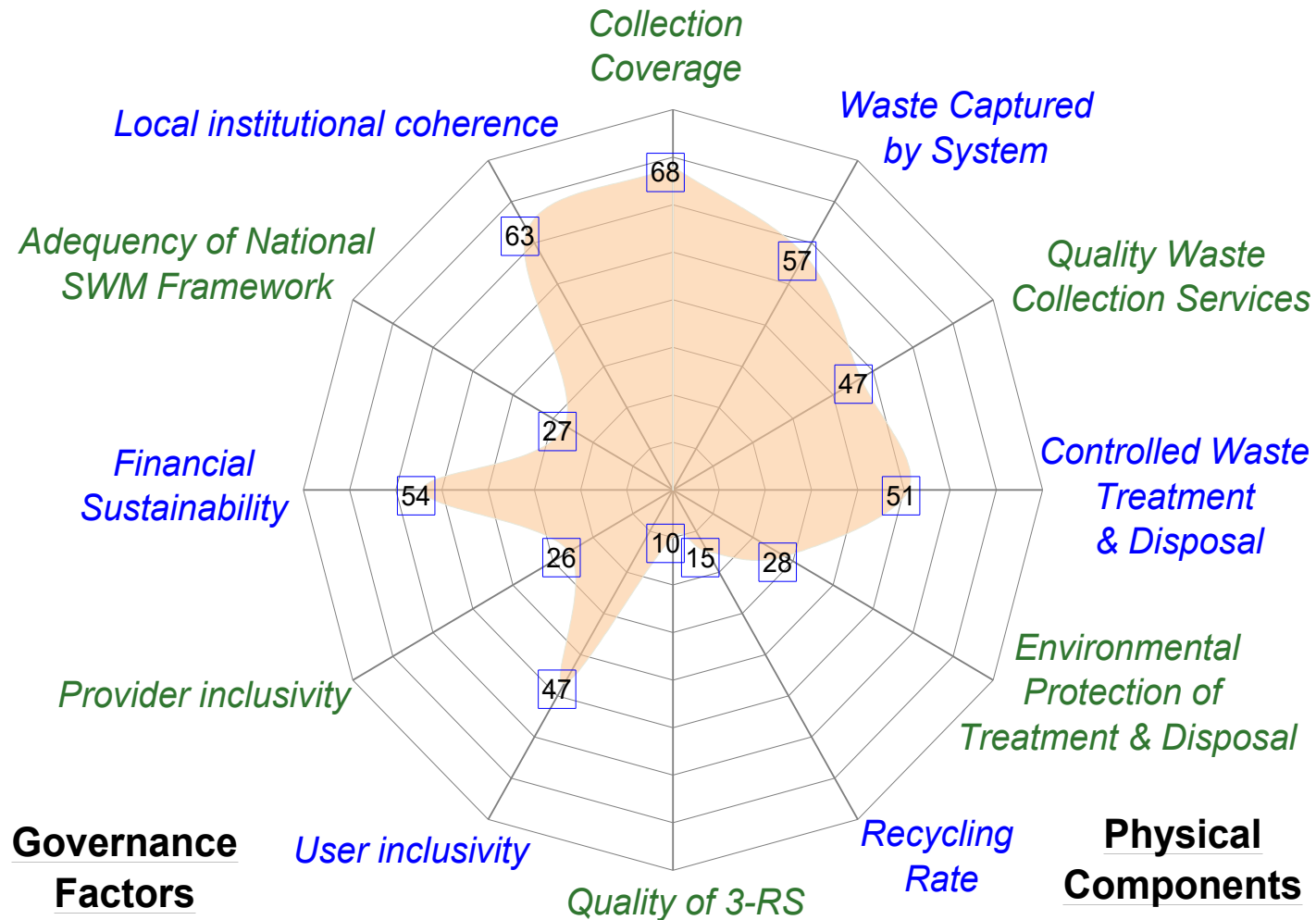
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### Performance Evaluation of MSW Sector in Pakistan

Wasteaware Benchmark  
Indicators



# Why We Need Strategy?

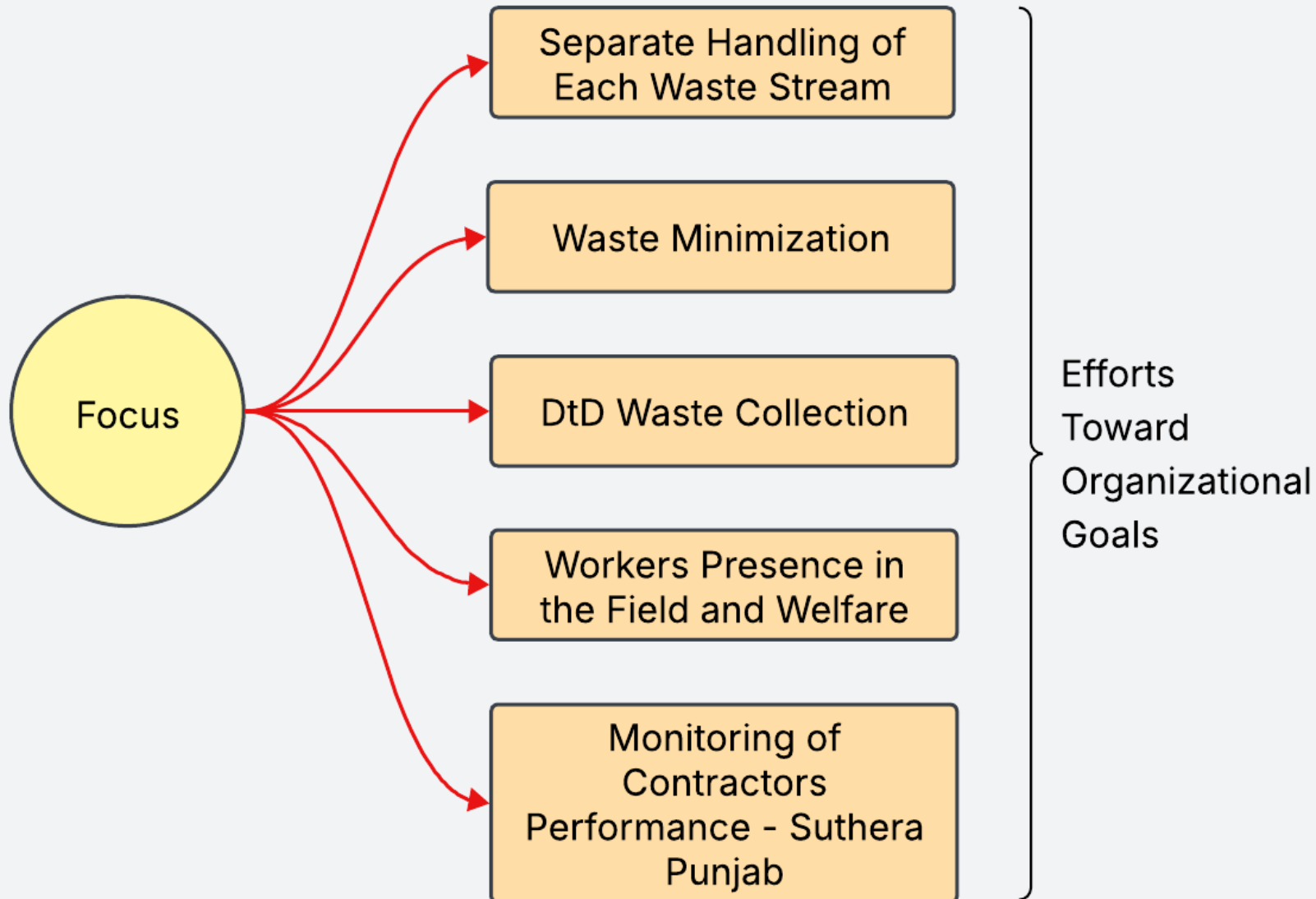
## Focus



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### Waste Streams:

- Household Waste
- Commercial Waste
- Institutions Waste
- Animal Dung
- C&D/ Debris Waste
- Hospital Waste
- Slaughterhouse
- F&V Market Waste
- Industrial Waste
- Sludge Waste

# Why We Need Strategy?

## Resource Allocation



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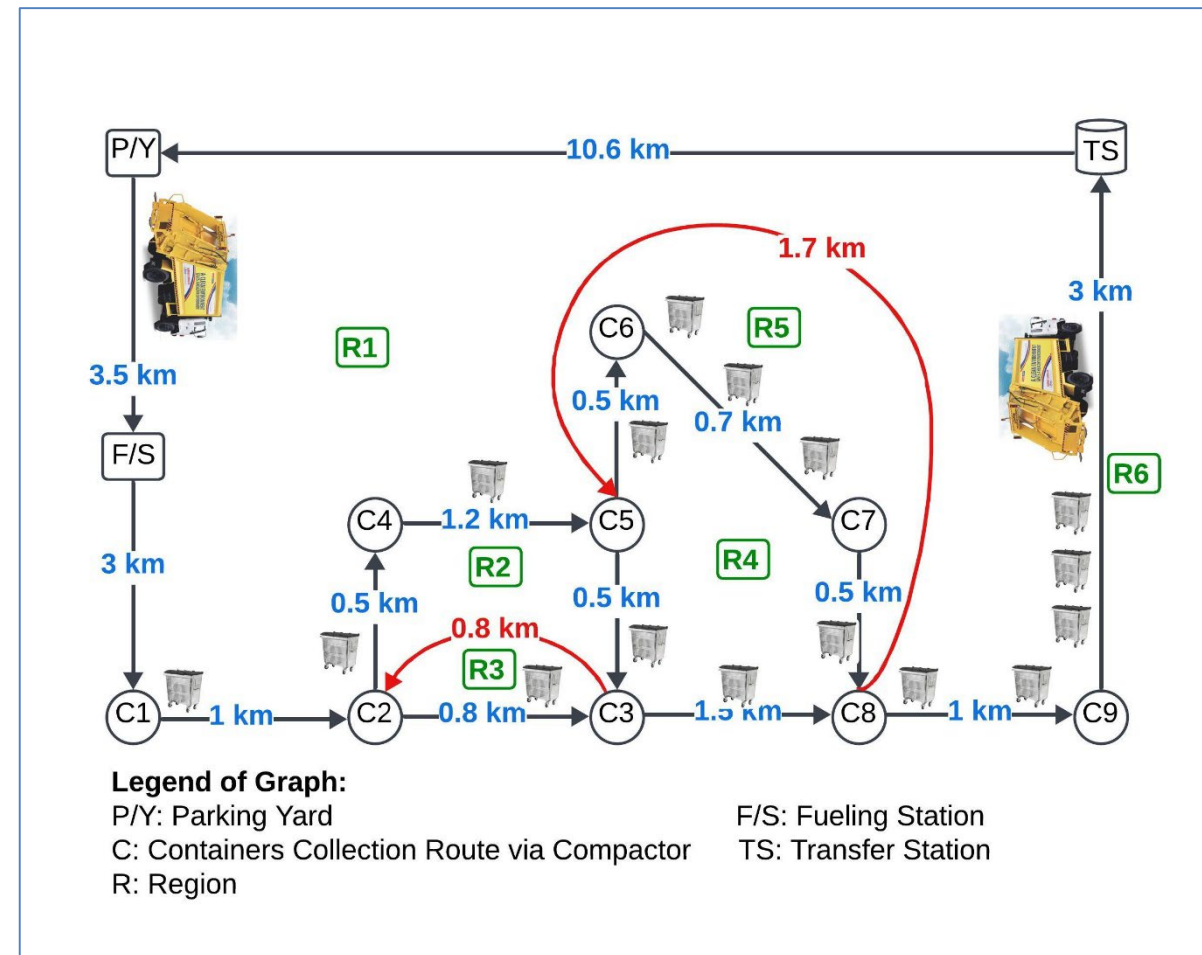
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Low Volumetric Capacity to High Vol. Capacity Fleet →

Low Income to High Income Areas ↓

AD \ FT	PR	MD	C <sub>(5-8)</sub>	C <sub>(11-13)</sub>
CS	CS, PR	CS, MD	CS, C <sub>(5-8)</sub>	CS, C <sub>(11-13)</sub>
LI	LI, PR	LI, MD	LI, C <sub>(5-8)</sub>	LI, C <sub>(11-13)</sub>
MI	MI, PR	MI, MD	MI, C <sub>(5-8)</sub>	MI, C <sub>(11-13)</sub>
HI	HI, PR	HI, MD	HI, C <sub>(5-8)</sub>	HI, C <sub>(11-13)</sub>

Vehicle Selection based on area dynamics –  
Apply Logics



Fleet Route Design/ Optimization – Example  
for effectual implementation



# Why We Need Strategy?

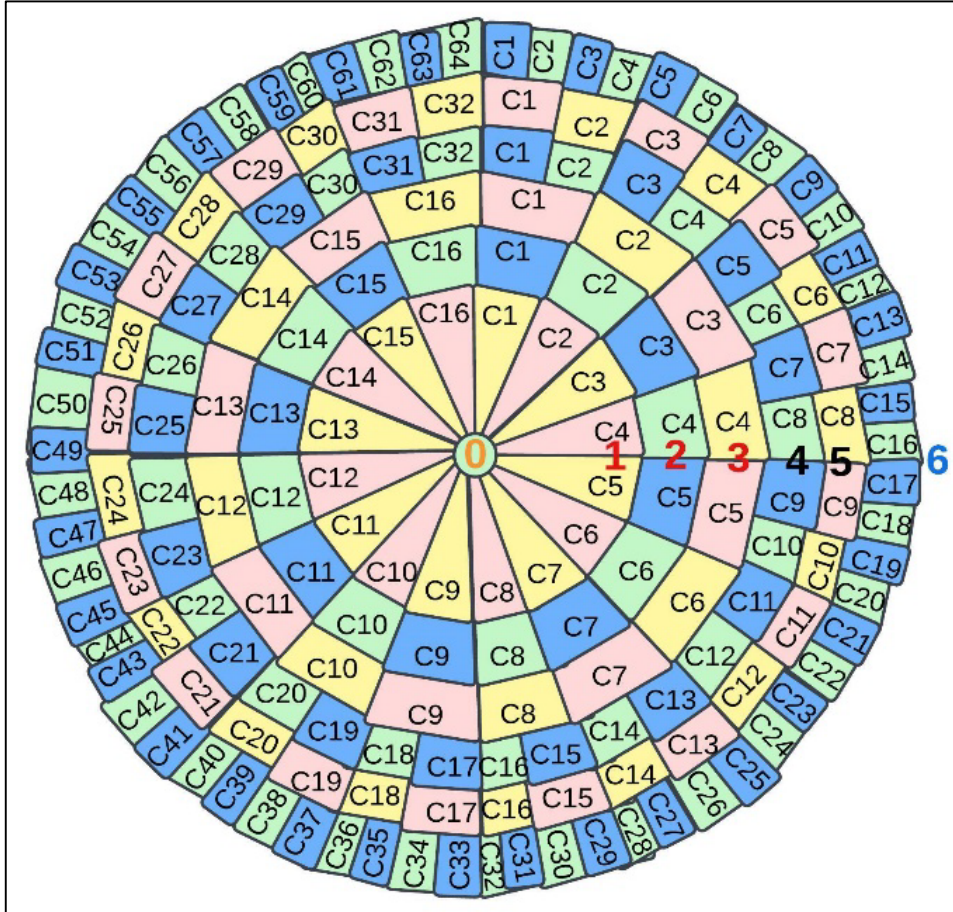
## Resource Allocation



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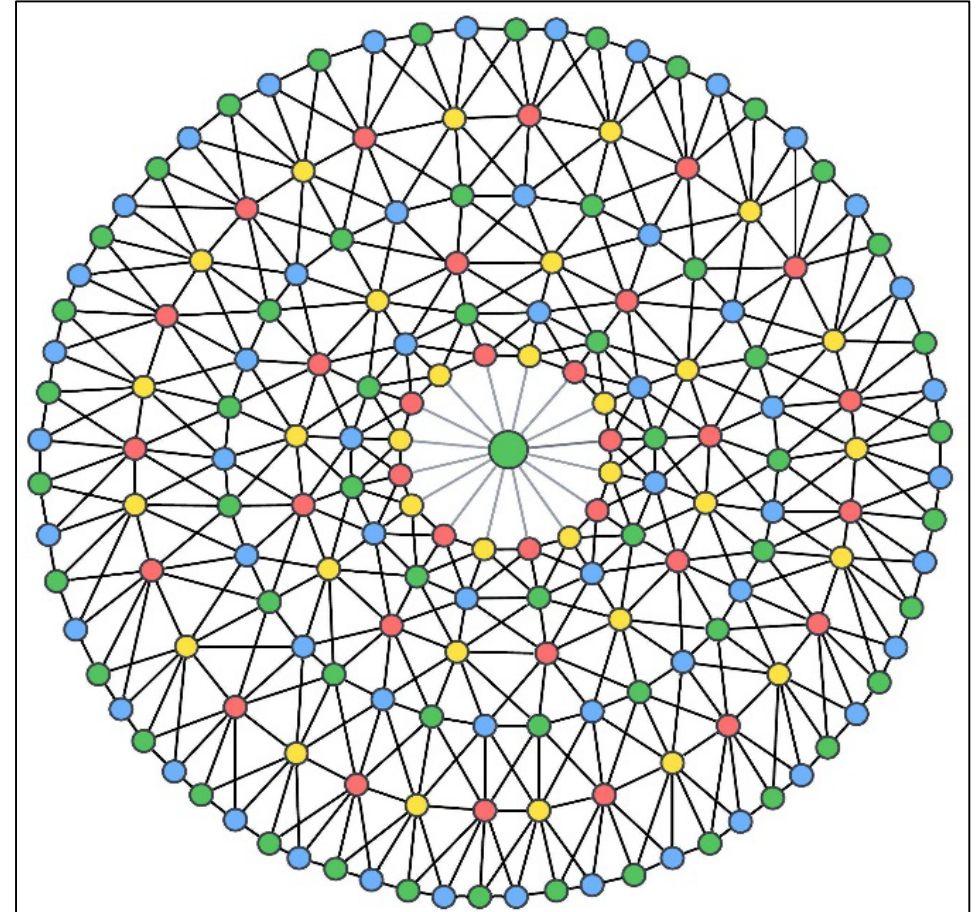


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**Residential Areas**

**Technical input: 80 HH | 6 PP/HH | 3 kg/HH**



**Resource Allocation Planning –  
Waste Catchment Area Concept  
(0.8 cum WSC – 250 kg)**

# Why We Need Strategy?

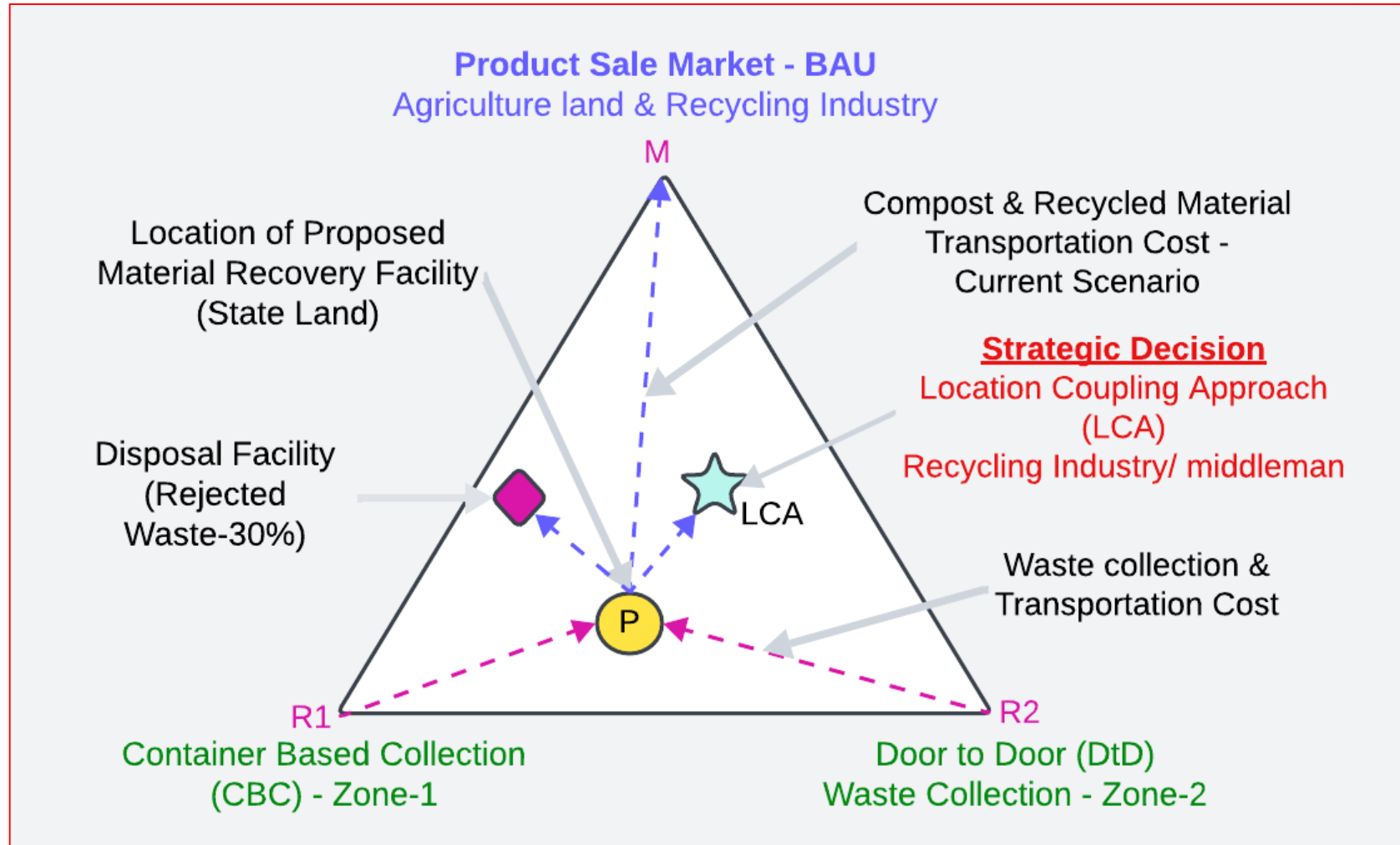
## Decision Making



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**Example: Bulk Reducing Product Model –  
Webbers Material Indexing Approach**

# Why We Need Strategy?

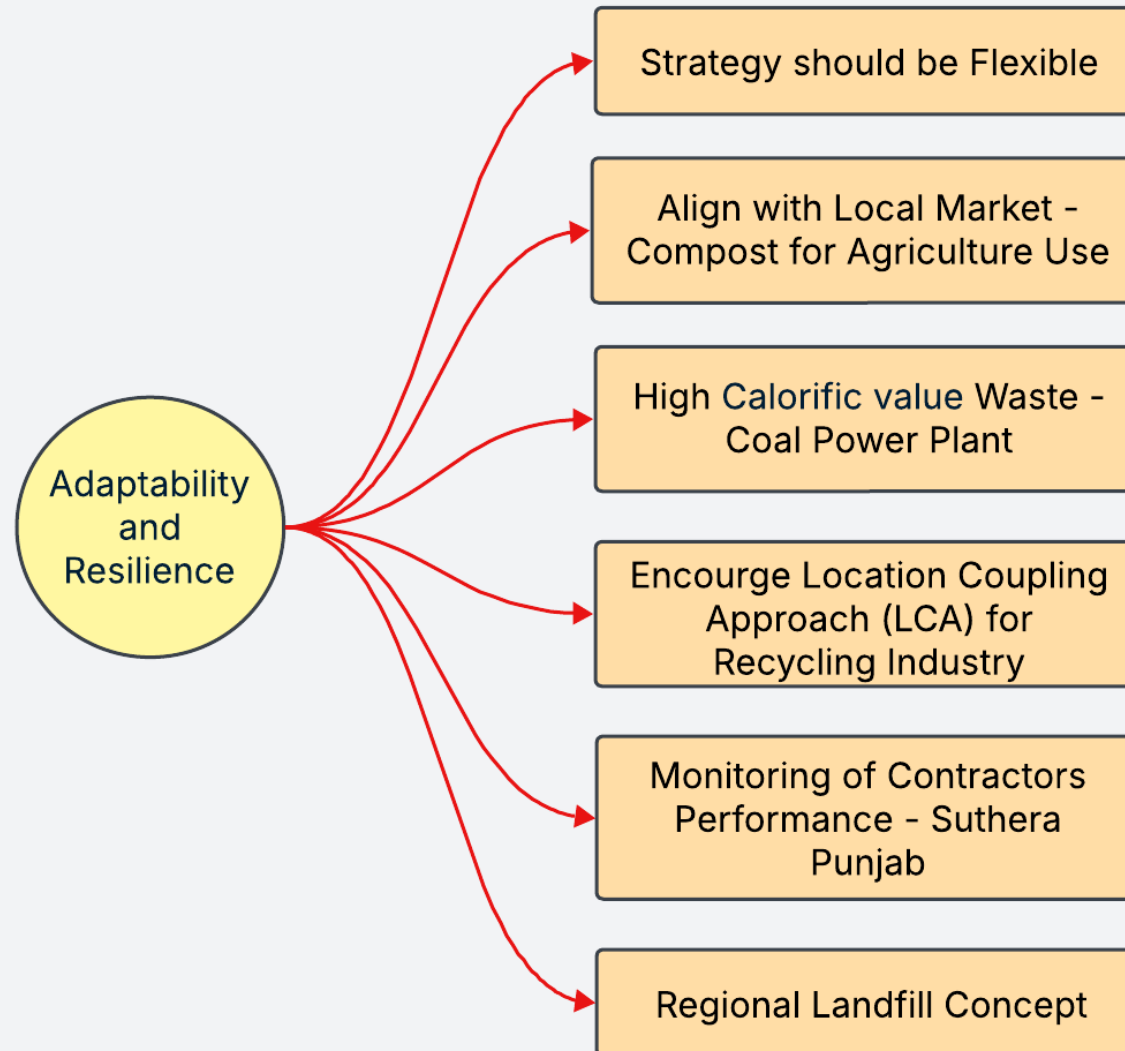
## Adaptability and Resilience



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# Why We Need Strategy?

## Communication & Stakeholders Alignment



- Engagement of Internal & External Stakeholders – SWM Business
- Collaboration and Sense of Responsibility for better communication – CBO, Regular Meetings, PPP etc.

- Engagement
- **Job Descriptions (JDs)**
- Workers & Drivers  
Health and Safety  
Learning Development

- Business Value
- **Innovation**
- **Operational SOPs**

- Community Engagement
- **Employment Opportunities**
- Improving Livelihoods

- **Economic Performance**
- Corporate Governance

- **Business Collaboration**
- PPP
- **Innovation**

- **Funding**
- Industry-Academia Exchange
- **Research**





# Why We Need Strategy?

## Competitive Advantage



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Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Data on actual field surveys</li> <li>• Agreed outcomes/ actions after stakeholders consultation</li> <li>• Scientific reasoning for decision making</li> <li>• Replication through bottom-up approach</li> <li>• Align with SDGs and NDCs</li> </ul>	<ul style="list-style-type: none"> <li>• Absence of waste related guidelines</li> <li>• Limited community engagement</li> <li>• Informal waste business</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• PPP for waste treatment and disposal</li> <li>• Climate funding for sectoral GHG emissions reduction</li> <li>• Community engagement for behavior change – Source segregation</li> <li>• These guidelines can pave the way for provincial/ national SWM strategy and Act for Sustainability of the Sector</li> </ul>	<ul style="list-style-type: none"> <li>• It may enforce the technology/ methods/ mat. logics – Less liberty for the local sector to evolve through experience/ experiments but we have sectoral lesson learned in Lahore, Rawalpindi and Sahiwal</li> <li>• It cannot be fully implemented in metropolitan cities but it can guide</li> </ul>

# Waste Strategy Outlines for Sahiwal












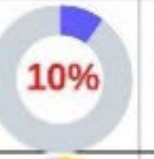
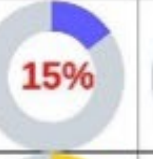
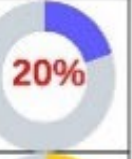
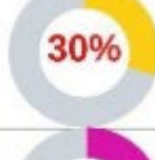
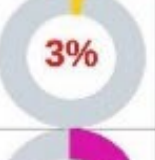








## Household Level Interventions - Example



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Level	Forces		Dimensions	Household Waste Generation Level	Targets	2025	2030	2035	2040
Level-1	Entice Forces	Infra - structure	Formal Waste Management Actors	Household separate waste storage arrangements - wet & dry waste					
		Mirror	Informal Actors - Waste Recovery	Behaviour of waste handlers - awareness & integration with circular economy					
	Repels Forces	Dry Waste	Waste Economics	Behaviour towards waste segregation - recyclables education programs					
		Sectoral Products	Product Market/ Business	Focus on reduce & re-use of waste materials with household composting					
		Sectoral Environment	Climate Change	Low carbon footprint - GHG emissions reduction-education sessions					



# Waste Strategy Outlines for Sahiwal

## Street Level Interventions



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Level	Forces		Dimensions	Street Level	Targets	2025	2030	2035	2040
Level-2	Entice Forces	Infra - structure	Formal Waste Management Actors	Mode of waste collection - DtD	100%	20%	20%	30%	30%
				Diversion of waste from open plots and open drains - avoidance illegal disposal	100%	25%	50%	20%	5%
		Mirror	Informal Actors - Waste Recovery	Avoidance informal scavenging	80%	10%	20%	30%	20%
				Integration of informal sector with circular economy	50%	5%	10%	15%	20%
	Repels Forces	Dry Waste	Waste Economics	Behaviour towards waste segregation - recyclables education programs	50%	5%	10%	15%	20%
		Sectoral Products	Product Market/ Business	Registration of buyback centers	80%	10%	20%	30%	20%
		Sectoral Environment	Climate Change	Efforts towards GHG emissions reduction	80%	10%	20%	30%	20%

# Waste Strategy Outlines for Sahiwal









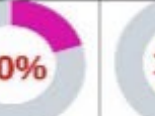









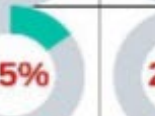














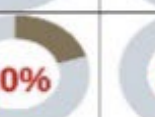
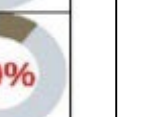
## Residential Block Level Interventions



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Level	Forces		Dimensions	Block Level	Targets	2025	2030	2035	2040
Level-3	Entice Forces	Infra - structure	Formal Waste Management Actors	Communal waste storage system - CBC					
				Underground/ semi-underground waste storage system					
		Mirror	Informal Actors - Waste Recovery	Avoidance informal scavenging					
				Integration of informal scavengers with formal waste management system					
	Repels Forces	Dry Waste	Waste Economics	Quality of recyclables					
		Sectoral Products	Product Market/ Business	Registration of buyback centers					
		Sectoral Environment	Climate Change	Efforts towards GHG emissions and leachate reduction					



# Waste Strategy Outlines for Sahiwal

## Zone Level Interventions



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Level	Forces		Dimensions	Zone Level	Targets	2025	2030	2035	2040
Level-4	Entice Forces	Infra - structure	Formal Waste Management Actors	Mobile waste transfer stations	50%	10%	10%	15%	15%
				Waste enclosures/ temporary collection points	50%	10%	10%	15%	15%
		Mirror	Informal Actors - Waste Recovery	Avoidance of informal recovery of waste	80%	20%	30%	20%	10%
				Control on stray animals and birds population	80%	10%	40%	20%	10%
	Repels Forces	Dry Waste	Waste Economics	Quality of recyclables	80%	20%	30%	20%	10%
		Sectoral Products	Product Market/ Business	Registration of buyback centers	80%	10%	20%	30%	20%
		Sectoral Environment	Climate Change	Efforts towards GHG emissions and leachate reduction	80%	15%	35%	20%	10%



# Waste Strategy Outlines for Sahiwal
















## *Town Level Interventions*



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Level	Forces		Dimensions	Town Level	Targets	2025	2030	2035	2040
Level-5	Entice Forces	Infra - structure	Formal Waste Management Actors	Establishment of waste transfer stations					
			Informal Actors - Waste Recovery	Control on birds population					
	Repels Forces	Sectoral Environment	Climate Change	Efforts towards GHG emissions and leachate reduction					

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## City Level Interventions



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Level	Forces		Dimensions	City Level	Targets	2025	2030	2035	2040
Level-6	Entice Forces	Infra - structure	Formal Waste Management Actors	Waste diversion from landfill/ establishment of waste treatment facility					
		Mirror	Informal Actors - Waste	Public private partnership (PPP) for waste treatment					
	Repels Forces	Dry Waste	Waste Economics	Recovery of usefull materials from waste					
				Products for recycling industry and agriculture sector (soil fertility)					
		Sectoral Products	Product Market/ Business	Environment monetary value - carbon offset/ carbon credit potential					
				Environment monetary value - reflection in NDCs of Pakistan					
		Sectoral Environment	Climate Change	Efforts towards GHG emissions reduction and leachate management					



# Waste Strategy Outlines for Sahiwal

## *District & Divisional Level Interventions*



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Level	Forces		Dimensions	District/ Regional Level	Targets	2025	2030	2035	2040
Level-7	Entice Forces	Infra - structure	Formal Waste Management Actors	Controlled disposal of municipal solid waste with landfill recovery					
				Establishment of landfill site with methane recovery and leachate management - regional concept					
				Rehabilitation of old disposal facilities with cost effective techniques - phytocapping					
		Mirror	Informal Actors - Waste Recovery	Minimal access of scavengers at disposal facilities					
	Repels Forces	Dry Waste	Waste Economics	Minimal recovery of recyclables at disposal facility - health hazard					
		Product Market/ Business	Product Market/ Business	Environment monetary value of landfill gas recovery - carbon offset/ carbon credit potential					
				Environment monetary value of landfill gas recovery - NDCs of Pakistan					
		Sectoral Environment	Climate Change	Efforts towards GHG emissions reduction and leachate management					

# Waste Strategy Outlines for Sahiwal

## *Prioritizing Interventions and interconnection*

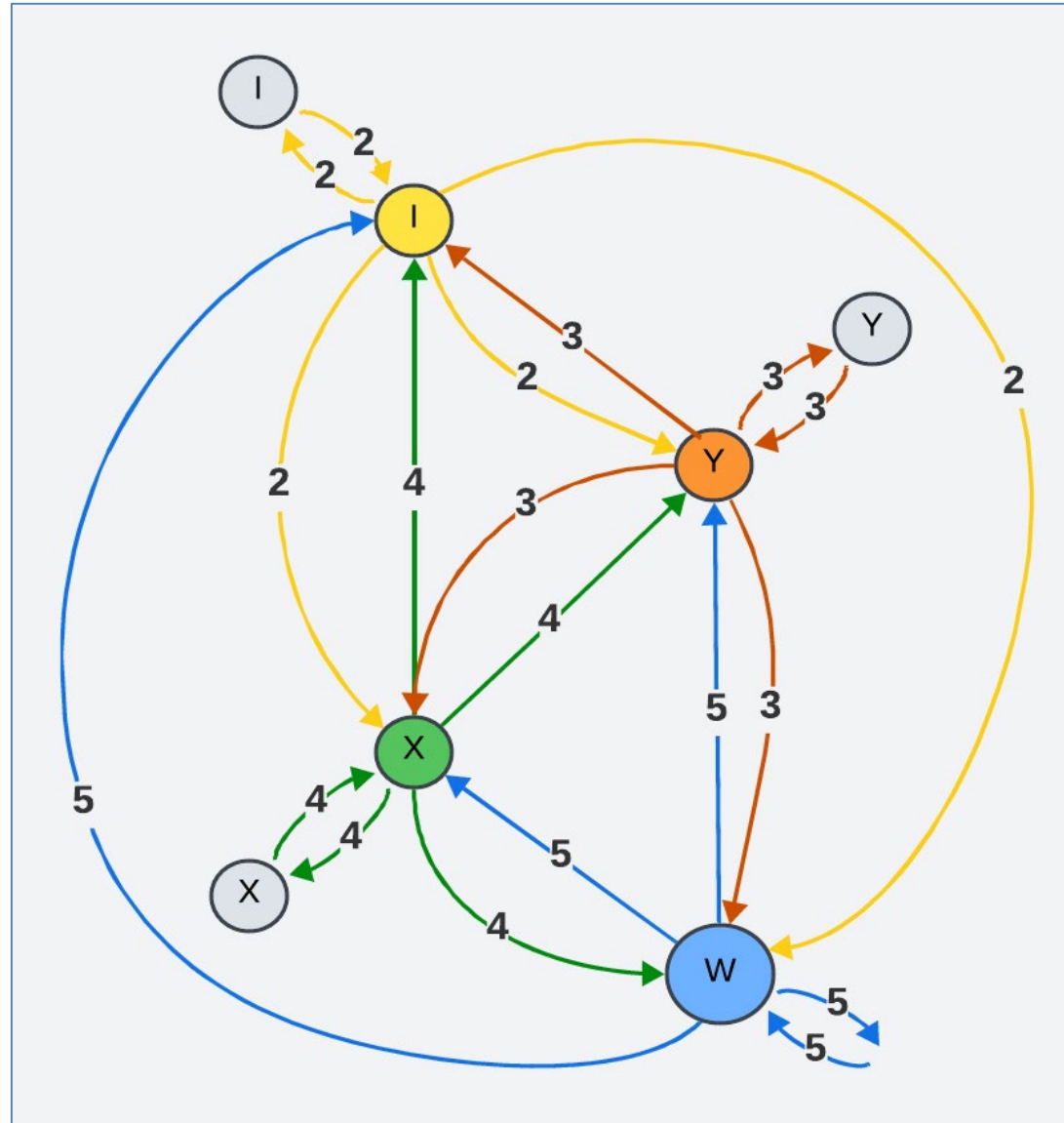


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- Assigning marks/weightage to each level after consultation with stakeholders
- Multi-criteria decision making approach



### Legend:

**W:** High Priority  
**X:** Medium High Priority  
**Y:** Medium Priority  
**I:** Low Priority

- Roadmap for achieving long-term objectives –
  - Machinery Life 7 Years;
  - Waste Treatment and disposal Project Life are 15 Years; BOT basis
  - Transitional phase planning before Contracts closure
  - Source separation/ waste minimization/ enforcement
  - Integration of Lessons learned for international and local outsourcing, Lahore Compost Plant, STD Sahiwal Plant, Lakhodair LFS & Rehabilitation of MB Dumpsite
- BOD of WMCs should ensures that the organization is moving in the right direction
  - Annual Performance Audit at divisional level



# Strategy document – Activities & Timelines



SN	Tasks	Status (2025)
1	Identification of relevant Stakeholders	Done
2	Consultation Sessions at Districts Level	In-Progress
3	Data Collection – Primary & Secondary	In-Progress
4	Draft Strategy Document	July - August
5	Review Meetings with Stakeholders	August – September
6	Strategy Document – Inputs from IGES Experts	October
7	Final Strategy Document	November
7	Workshop for dissemination of waste strategy Sahiwal	December



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**Thank You**