



Innovation & Impacts  
**Asian Development Bank**



FORWARD FASTER

# Accelerating the Concrete Solution to Plastic Waste



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Río Las Vacas | Guatemala

THE OCEAN™  
CLEANUP



Ville Azul Community | Costa Rica





**100,000 Floors** | Costa Rica



**Habitat**  
for Humanity®



**Berawa Beach Monsoon** | Bali, Indonesia

**ZERO PLASTIC WASTE**

**NET ZERO CARBON**



**RESIN 8**



RESIN8

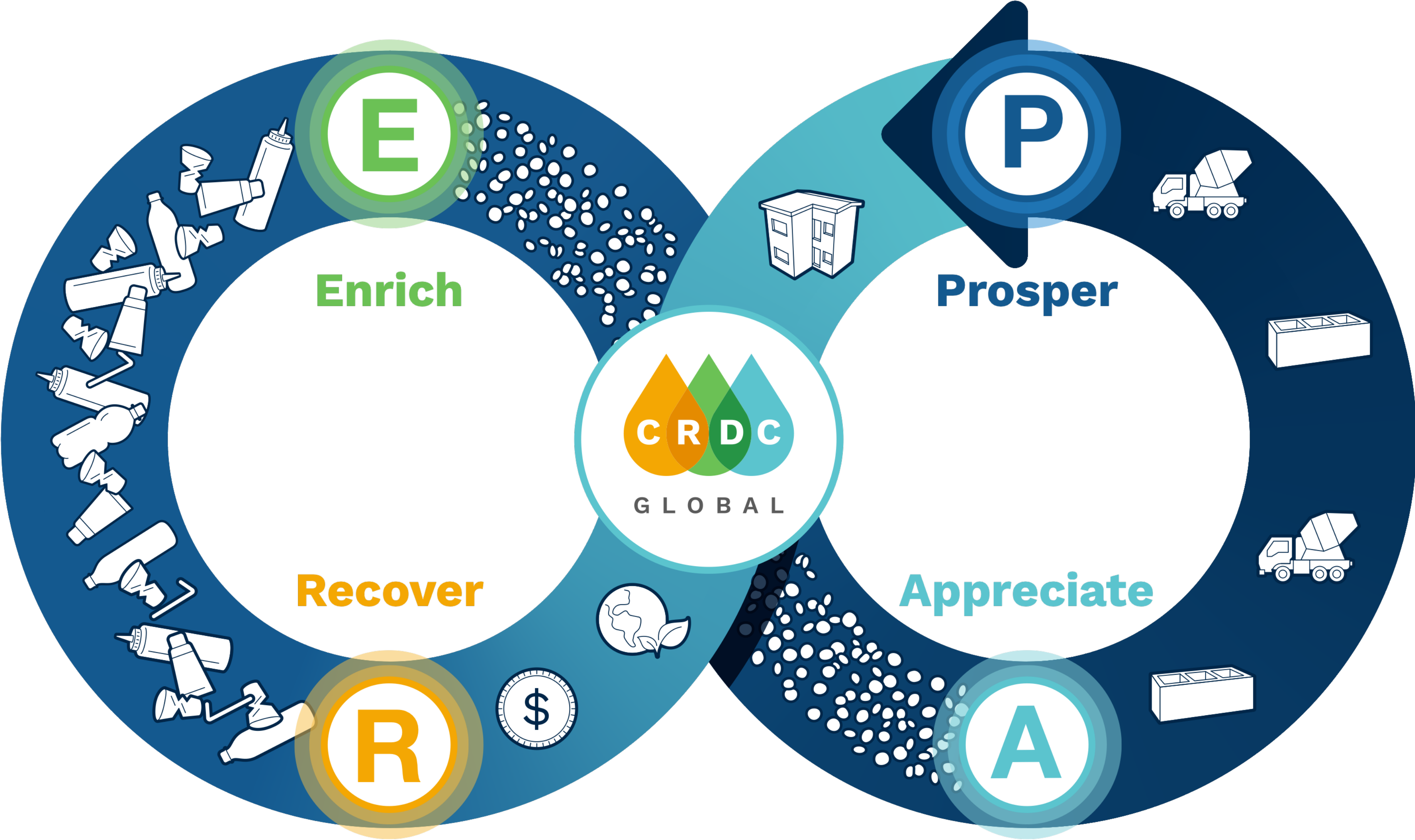


RESIN8  
CQ<sub>2</sub>RE

# RECOVER • ENRICH • APPRECIATE • PROSPER



INPUTS




OUTPUTS



# REAP IN ACTION FOR PLASTIC WASTE



**2** **ENRICH** 

**CRDC Global** enriches recovered plastics to create RESIN8™ building materials for the green construction industry.

**INPUTS**

**1** **RECOVER** 

Our **CRDC Recover PBC** subsidiary builds networks to recover plastics before they go to waste or litter the environment.

 **PROSPER** **4**

**CRDC Foundation** supports social housing and brings **REAP** zero waste education to schools, empowering a new generation to prosper.

**OUTPUTS**

 **APPRECIATE** **3**

**RESIN8™** improves the performance and recycled content of concrete and asphalt products, so they appreciate in value.

# REAP IN ACTION: GUATEMALA



# WHERE WE OPERATE TODAY



# SCALING WITH 20/20 VISION

- **Step 1:** Bring RESIN8™ plants to 20 cities strategically located for global expansion.
- **Step 2:** Grow production capacity to process 20,000 metric tons of plastics annually in each location.



★ Commercial Scale Plant    🟡 Small / R&D Scale Plant    🟢 CRDC In Development

# UNLOCKING IMPACT AT SCALE IN ASIA

## Addressing challenges and unlocking opportunities in the South and Southeast Asia

### PLASTIC WASTE MANAGEMENT CRISIS

>240 million tonnes

>50% mismanaged

Plastic waste generation & mismanagement critical in South & Southeast Asia

- Source segregation, collection & processing infrastructure investment lacking
- Informal sector focused on high value waste fractions
- ASEAN consuming class will double to 163 million households by 2030
- Recycling solutions developing but remain nascent



### BUILDING & CONSTRUCTION MARKET GROWTH

USD 538.5 billion

6.2% CAGR

Construction market size and forecast growth rate 2024-28 in South & Southeast Asia

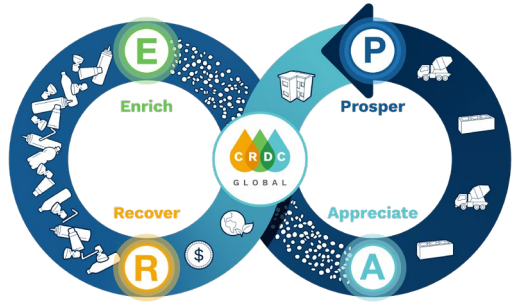
- Large-scale infrastructure projects
- Expanding transportation networks
- Growing middle class, urbanization and need for housing
- Growing demand for precast concrete and related products
- Sustainable construction practices
- Environmental damage due to sand and aggregate mining



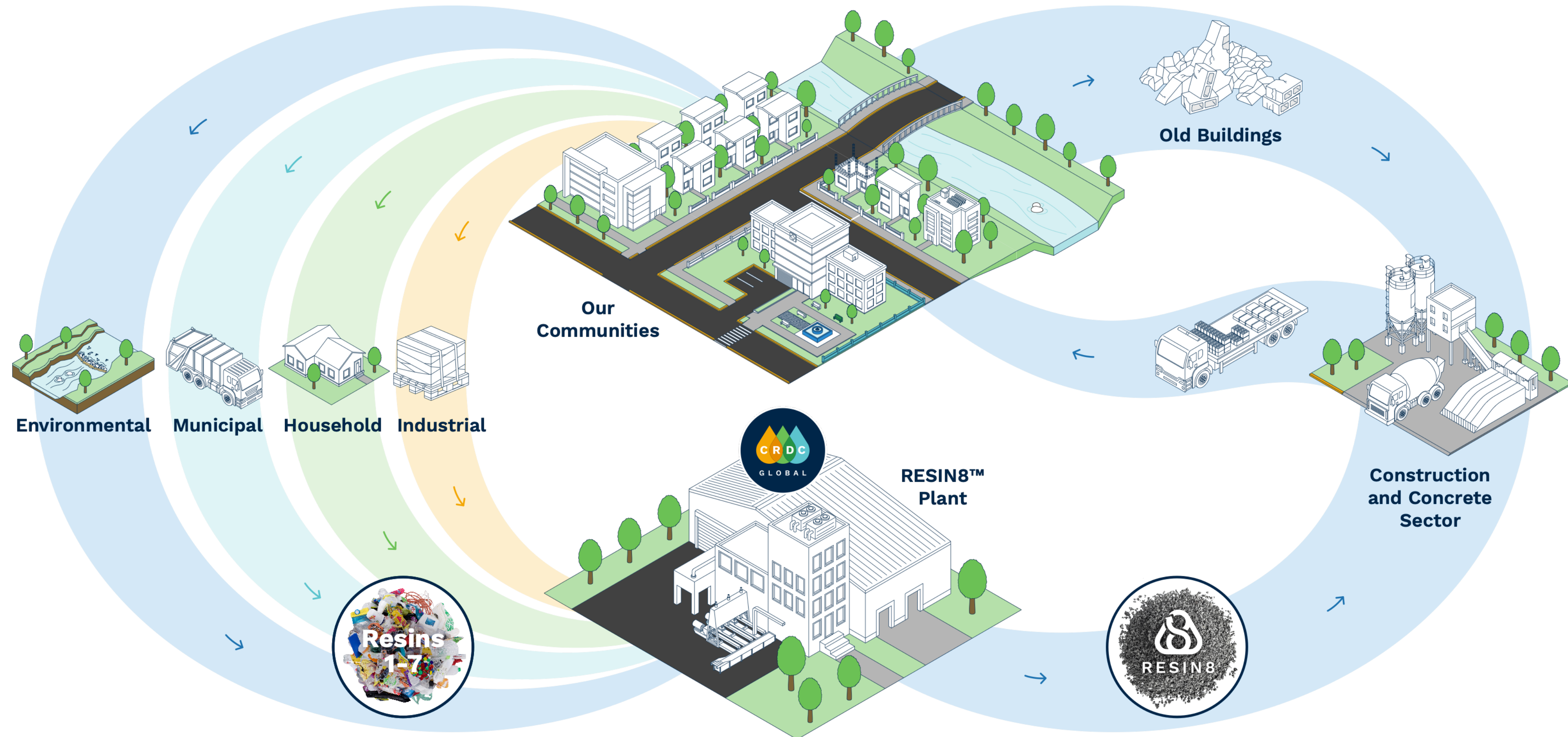
# SCALING WITH 20/20 VISION: ASIA



# LEVERAGING THE CRDC GLOBAL ECOSYSTEM



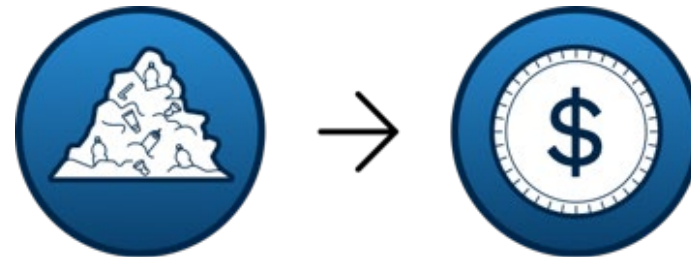
Driving circularity in the APAC region is an increasing imperative, reducing plastic waste and keeping resources in use. The CRDC Global REAP ecosystem approach enables a regenerative solution.



# SOLVING GAPS IN TWO MARKETS

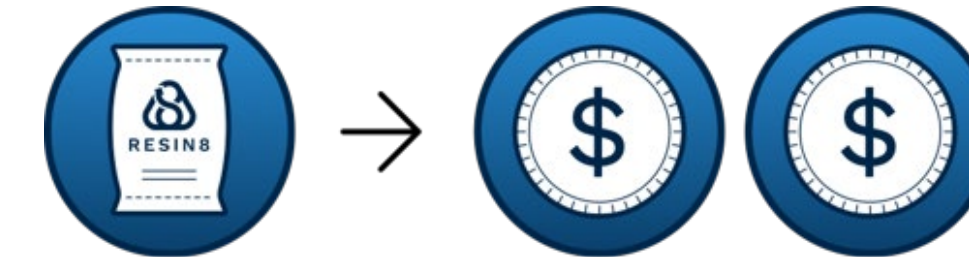
## PLASTIC PROCESSING REVENUE

- Tipping fee equivalent to local landfill or incineration fees
- Plastic credits for collection
- Beneficial disposal of residual plastic waste from recycling operations

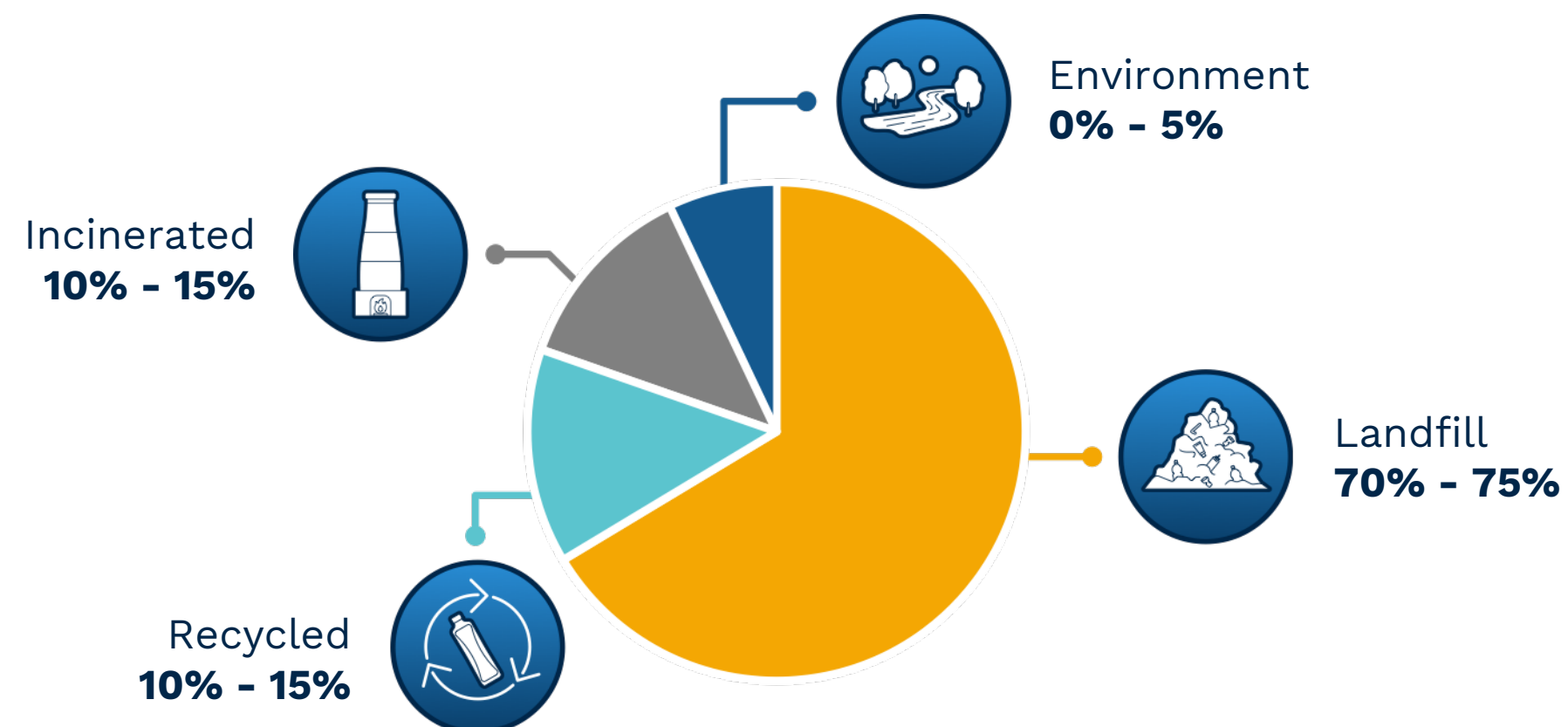


## PRODUCTS SALES REVENUE

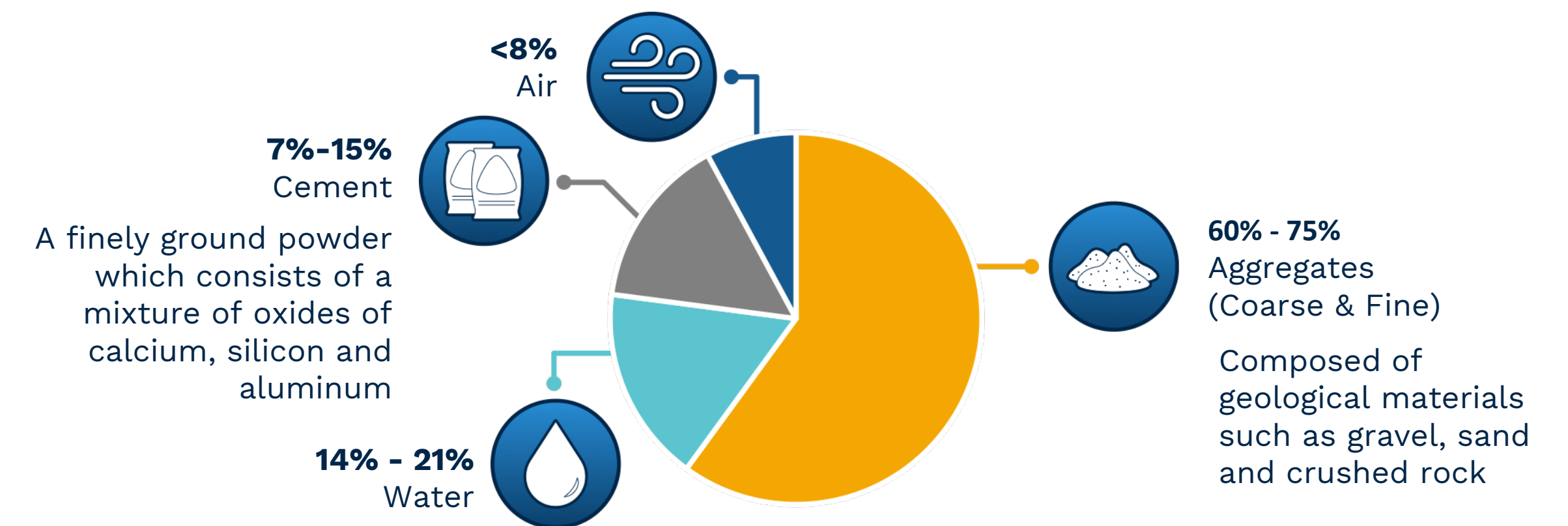
- Sales price premium for lightweight, performance **RESIN8** products
- CO2 sequestration, supporting construction industry decarbonization



## CURRENT FATE OF ALL USED PLASTICS



## KEY INGREDIENTS OF CONCRETE





# THE BAG THAT BUILDS: ENABLING GREEN CONSTRUCTION



Compelling public narrative to support collection and valorisation of plastic waste

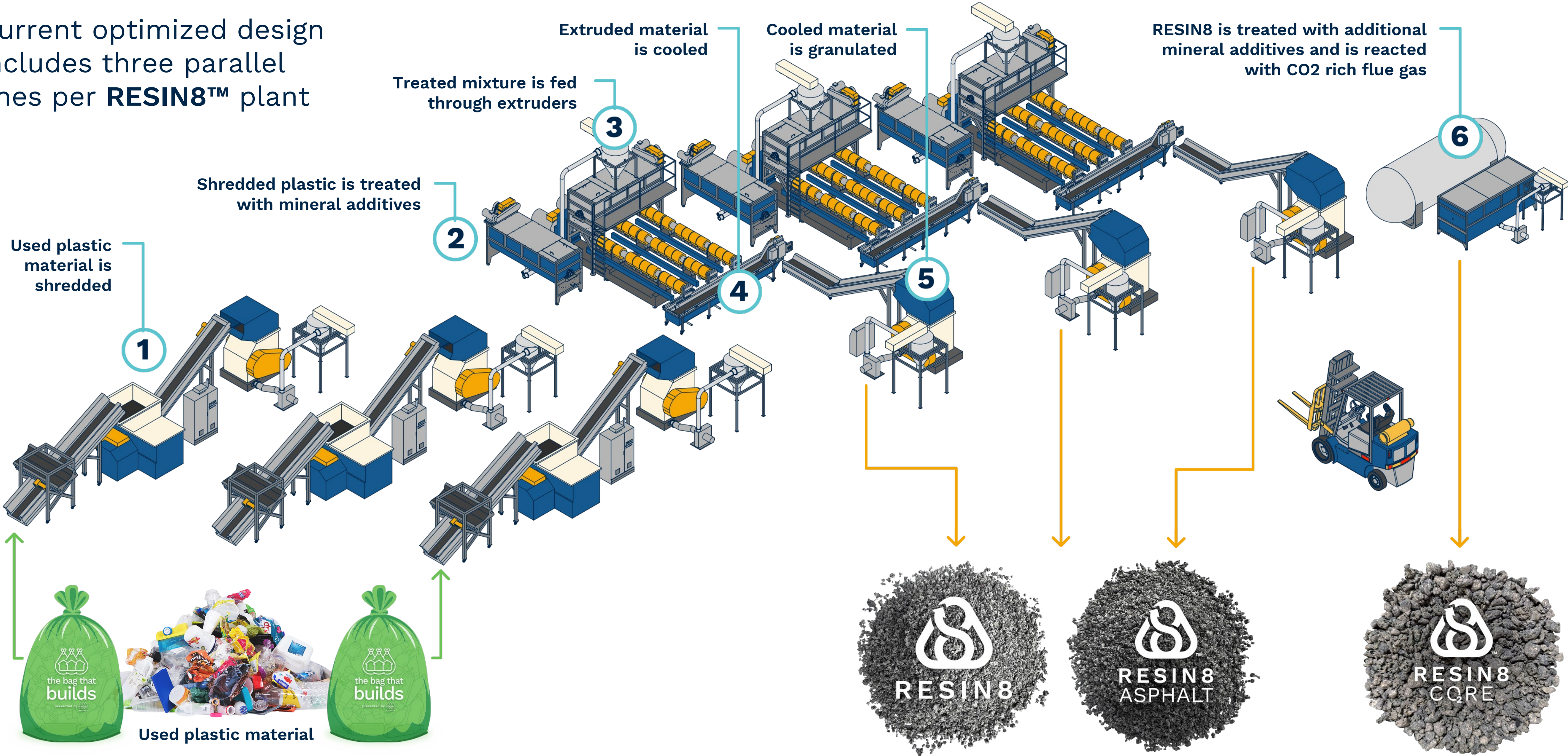


Source: NK Circular Economy Consulting research; company websites

# PROPRIETARY MACHINERY AND PROCESS



Current optimized design includes three parallel lines per RESIN8™ plant



# RESIN8 PLANT CAPACITY & OUTPUT

## Closing the loop on plastic waste with the construction industry



### PLASTIC WASTE FEEDSTOCK

**3.6 t/hour (3 lines)<sup>1</sup>**

- 3 shifts (24 hours)
  - 7 days/week
  - 49 weeks/year
  - 70% machine uptime
- = ~21,263 t/year**



### RESIN8™ PRODUCT OUTPUT

**4.5 t/hour (3 lines)**

- 3 shifts (24 hours)
  - 7 days/week
  - 49 weeks/year
  - 70% machine uptime
- = ~25,931 t/year<sup>3</sup>**



### POST-PRODUCTION REACTION TO RESIN8™ CORE

**2 t/hour (2 lines)**

- 3 shifts (24 hours)
  - 7 days/week
  - 49 weeks/year
  - 70% machine uptime
- = ~11,900 t/year**



CMU Blocks



Pavers



Curbs & Channels



Pre-cast



Floors



Asphalt

Note 1: 1.2 tonnes/hour/line of plastic waste

Note 2: Composition of 1 tonne of RESIN8 Base/Asphalt: circa 80% plastic waste and 20% mineral additives

Note 3: Of which ~8,900 becomes the feedstock for RESIN8 Core

# UNLOCKING MORE SUSTAINABLE CONSTRUCTION



**BAGGED READY MIX PRODUCTS**  
USA



**CMU BLOCKS**  
USA, MEXICO, COSTA RICA, SOUTH AFRICA



**ASPHALT**  
MEXICO, COSTA RICA



**PAVERS**  
USA, MEXICO, COSTA RICA, SOUTH AFRICA



**PRE-CAST CONCRETE**  
SOUTH AFRICA



**CURBS & CHANNELS**  
SOUTH AFRICA

# UNLOCKING IMPACT AT SCALE



An investment of \$6.8M<sup>(1)</sup>



Creates  
**45 NEW JOBS**



Absorbs  
**21,263 TONS OF  
LOW-VALUE PLASTIC**  
per year<sup>(2)</sup>



Produces  
**29,216 TONS  
OF RESIN<sup>8</sup>**  
per year<sup>(2)</sup>



Generates  
**\$16.6M ANNUAL  
REVENUE**  
at capacity

*Notes:*

*(1) Equipment CAPEX and first year OPEX, land/building additional*

*(2) At nominal steady state capacity*

# CONCLUSION: PARTNERING WITH ADB TO DRIVE IMPACT IN THE APAC REGION



## Social Impact



- **REAP Circular Economy Education** curriculum for schools and community engagement
- **THE BAG THAT BUILDS:** participation in the recovery of all plastic waste
- Green building materials for use in social housing

## Environmental Impact



- Capturing plastic waste before it enters the environment; avoiding landfill/incineration of plastics not targeted for mechanical recycling
- Bringing value to “tragic plastic” recovered from the environment
- Lowering CO2e with use of RESIN8™ as a green building material

## Economic Impact



- Circularity through industrial symbiosis: connecting the waste management sector with the building & construction industry
- Recovering economic value from traditionally “low value” plastic waste
- Reducing cement and natural aggregate use in concrete



## Collaborating with ADB in the Asia Pacific Region

- Identifying potential partners in the waste management and building and construction industry
- Building connections with initiatives targeting use of low carbon & green building materials
- Supporting CRDC Global’s social and environmental impact initiatives
- Connecting CRDC Global with national and local governments for project development
- Supporting use of RESIN8™ in capital projects funded by ADB
- Investing in CRDC Global and/or country-level projects

# THANK YOU

Questions or inquires, contact:

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# APPENDICES





# THE PROBLEMS WE SOLVE



## CARBON POLLUTION

Technologies for Carbon Capture, Utilization & Storage (CCUS) are vital to achieve Net Zero in the concrete industry, but most are expensive, water- and energy-intensive, environmentally invasive, and hard to scale.



## PLASTIC POLLUTION

Mismanaged waste plastics offgas CO<sub>2</sub>, degrade natural ecosystems, and threaten human health.



## CLIMATE JUSTICE

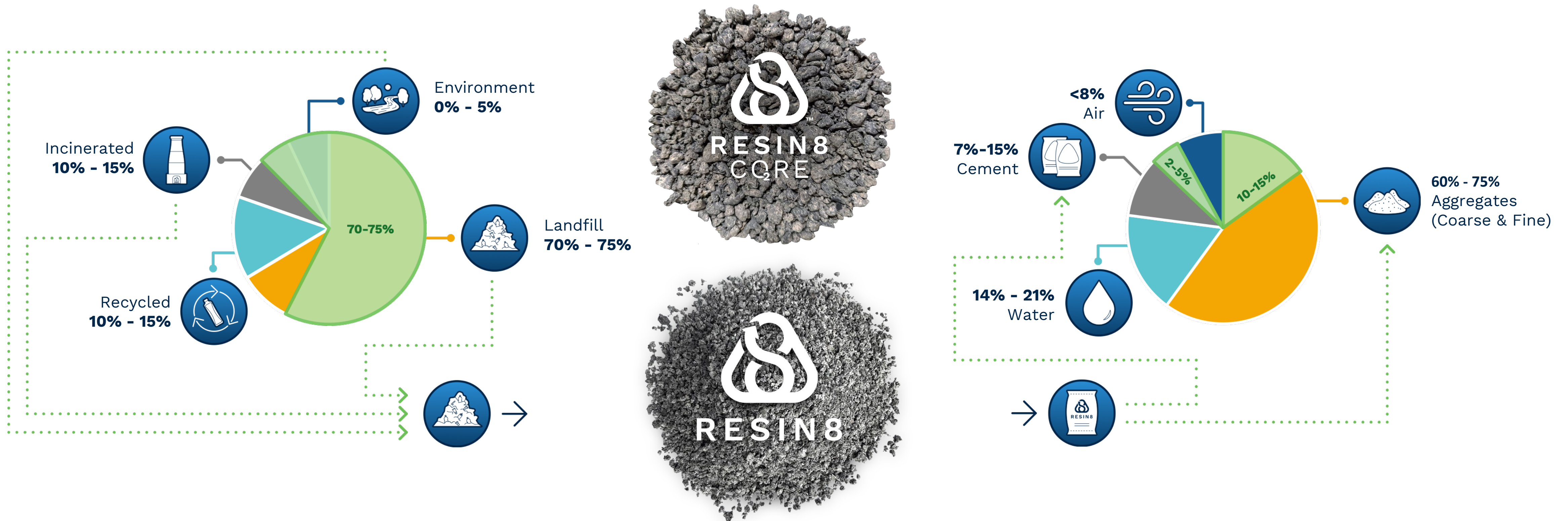
Existing waste management technologies exact a disproportionate toll on low-income communities and developing economies.



# INDUSTRIAL SYMBIOSIS

We utilise the by-product of one industry as a raw material input for another industry, in a manner that **creates synergy and promotes sustainability**. This collaborative strategy aims to optimize resource utilization, minimize waste generation, and enhance environmental stewardship.

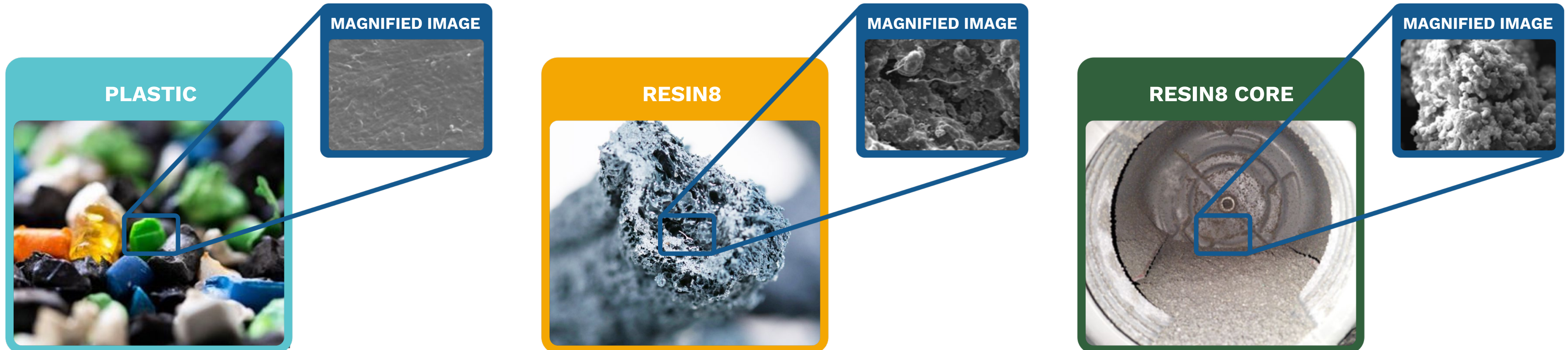
## REVOLUTIONIZING THE FATE OF PLASTIC WASTE BY GREENING THE INGREDIENTS OF CONCRETE



# ALTERING THE PROPERTIES OF PLASTIC

Construction products and applications attempting to utilise used plastic materials have, in the past, been limited to niche, often non-structural segments of the market. This limitation stems from plastic's intrinsic hydrophobic nature and smooth facial properties. Water plays a crucial role in the chemical bonding process between cement and natural aggregates, which is essential in the formation of concrete. Likewise, the rough and angular facial properties of aggregates play a crucial role in the mechanical bonding process of materials within the concrete matrix. This combination of chemical and mechanical bonding is the basis of concrete's superior strength and performance.

Therefore, if unchanged, the incorporation of plastics into a concrete mix typically diminishes the structural integrity. It adversely affects both the chemical interaction of cement with water and the mechanical interlocking between materials, thereby compromising the overall performance of the concrete composite. **Our range of RESIN8 building materials are formulated to exhibit the requisite functional properties to both chemically and mechanically bond within the concrete matrix.**



# ROBUST PATENTS AND TRADEMARKS



CDRC Global’s proprietary technologies are covered by a number of robust patent applications, including a supplementary patent submitted to the World Intellectual Property Organization (WIPO).

The strength and value of the company’s IP rests in the overarching and broad claims of preconditioning and sanitization of commingled plastic waste to create a unique feedstock – enabling the related processing claims into a synthetic construction material, having superior concrete adhesion characteristics.



● Patentes Filed, Pending or Published.

Country / Area	Application No.	Filing Date	Publication No.	Publication Date	Pat / Reg No.	Status	Title / Trademark
<b>Trademarks</b>							
USA	88/781054	31-Jan-2020		08-Dec-2020		Allowed	RESIN8
Costa Rica	2020-010210	08-Dec-2020		17-May-2021	298039	Allowed	RESIN8
México	119852977077/ 0119852979008	07-Jul-2023				Pending	RESIN8
México	0119852977089/0119852 979742/0119852977093	07-Jul-2023				Pending	CRDC
México	1119852977649	07-Jul-2023				Pending	The Bag That Builds
México	119852979000/01198529 797441/0119852977651	07-Jul-2023				Pending	REAP Recover Enrich Appreciate Prosper
<b>Patents</b>							
ARIPO	AP/P/2021/01320 4	22-Oct-2019				Pending	Preconditioned Resin Aggregate
Australia	2019368544	22-Oct-2019				Pending	Preconditioned Resin Aggregate
Canada	3157813	22-Oct-2019	3157813	30-Apr-2020		Published	Preconditioned Resin Aggregate
Costa Rica	2021-0253	22-Oct-2019				Pending	Preconditioned Resin Aggregate
European Patent Convention	19875500.1	22-Oct-2019	3870417	01-Sep-2021		Published	Preconditioned Resin Aggregate
Hong Kong	62022048981.4	22-Oct-2019	40060556A	20-May-2022		Published	Preconditioned Resin Aggregate
India	202117022874	22-Oct-2019	202117022874A	29-Oct-2021		Published	Preconditioned Resin Aggregate
México	MX/a/2021/004615	22-Oct-2019				Pending	Preconditioned Resin Aggregate
New Zealand	776235	22-Oct-2019				Pending	Preconditioned Resin Aggregate
Singapore	11202104093P	22-Oct-2019				Pending	Preconditioned Resin Aggregate
USA	18/154664	13-Jan-2023				Pending	Preconditioned Resin Aggregate
USA	17/285050	13-Apr-2021	20220126482	28-Apr-2022	11633878	Granted	Preconditioned Resin Aggregate
Vietnam	1-2021-02923	22-Oct-2019				Pending	Preconditioned Resin Aggregate
Patent Cooperation Treaty	CA2019/051495	22-Oct-2019	WO2020/08 2173	30-Apr-2020		Converted	Preconditioned Resin Aggregate
South Africa	2021/03474	22-Oct-2019				Pending	Preconditioned Resin Aggregate
Patent Cooperation Treaty	EP2022/060750	22-Apr-2022	WO2020/22 3808	27-Oct-2022		Published	Preconditioned Resin Aggregate

# NET CARBON NEGATIVE IN COSTA RICA



In a recent (2023) cradle to gate Life Cycle Assessment (LCA), conducted by Tecnológico de Costa Rica, at **CRDC Global's** flagship **RESIN8™** plant in San Jose, it was found that; when considering counterfactual plastic end-of-life scenarios such as the environment and/or landfill, **the production of RESIN8 has a net negative global warming potential of -44kgs of CO2e per metric ton produced.**

This positive LCA result will allow **CRDC Global** customers to reduce the embodied carbon of concrete and asphalt products.



## ENVIRONMENTAL IMPACT BY CATEGORY AND BY PROCESS FOR 1KG OF RESIN8™

Impact Category	Unit	Transport	Entry of plastics	Plastic shredding	Plastic grinding	Mixing & extrusion of RESIN8™	RESIN8™ grinding
Global warming potencial	kg CO <sub>2</sub> eq	0.0261	-0.8832	0.1803	0.1803	0.2732	0.1799
Acidification	kg SO <sub>2</sub> eq	0.0001	-0.0032	0.0002	0.0002	0.0003	0.0002
Depletion of abiotic resources	kg Sb eq	1.10x10 <sup>-7</sup>	-3.68x10 <sup>-6</sup>	4.08x10 <sup>-8</sup>	4.04x10 <sup>-8</sup>	4.84x10 <sup>-8</sup>	3.63x10 <sup>-8</sup>
Depletion of abiotic resources, fossil fuels	MJ	-15.055	2.308	2.312	-5.004	2.312	2.762
Eutrophication	kg PO <sub>4</sub> eq	0.00003	-0.00149	0.00003	0.00003	0.00005	0.00002
Depletion of the ozone layer	kg CFC-11 eq	3.179x10 <sup>-10</sup>	-8.381x10 <sup>-8</sup>	1.913x10 <sup>-9</sup>	1.913x10 <sup>-9</sup>	7.44x10 <sup>-9</sup>	1.906x10 <sup>-9</sup>
Photochemical oxidation	kg NMVOC	0.0002	-0.0032	0.0004	0.0004	0.0005	0.0004

The above LCA was conducted in accordance the ISO 14044:2007 standard and the Product Category Rule (PCR) 2019:14 "Construction Products" version 1.2.5. There is currently no specific PCR designed explicitly for synthetic, hybrid mineral-polymer aggregates. Nevertheless, the abovementioned PCR is utilized as a benchmark. This PCR outlines that a LCA from cradle to gate must encompass modules A1-A3. Module A1 involves the supply of raw materials. Module A2 addresses the transportation of raw materials to the production sector. Module A3 centres on the manufacturing process of the product, in this instance, RESIN8. This module considers the preparation of auxiliary products for manufacturing, including water, limestone, and ash, as well as the use of energy and the integration of waste in the process.

# HOW CRDC GLOBAL OPERATES



**CRDC Global** is the operational nexus of the group, responsible for the commercial building materials manufacture and machinery technology components of the overall value proposition. It owns the intellectual property rights, patents, and trademarks associated with the **RESIN8™** manufacturing processes, technology, and products.

**CRDC Global** owns and licenses its technology to Country- or Regional-level entities, including **CRDC North America**. Country or Regional entities implement, own (wholly or by majority stake), and manage **RESIN8™** manufacturing plants in their defined license territory.

## 1. CRDC GLOBAL

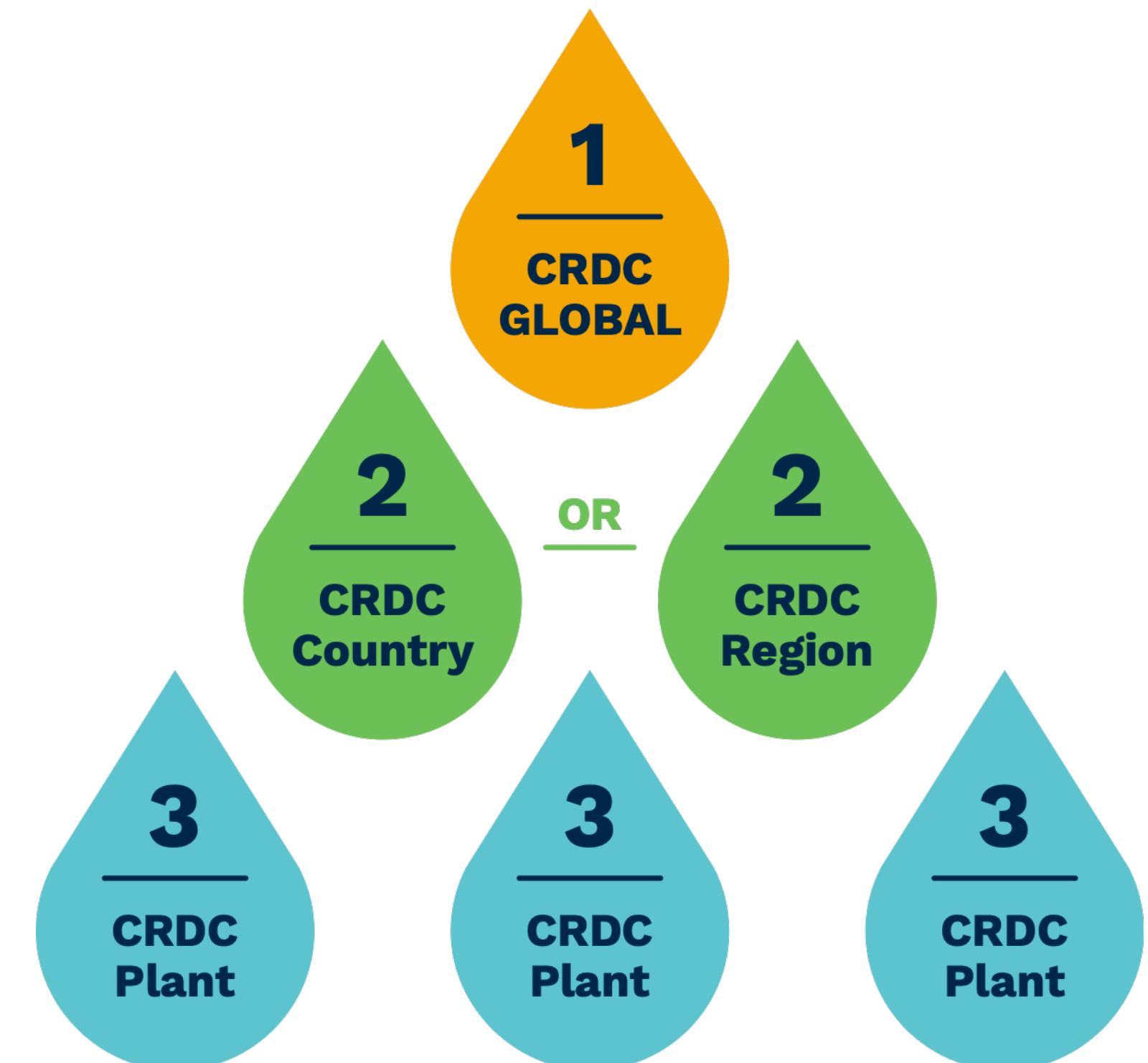
- Governs and sets overall strategic direction of the group.
- Conducts and co-ordinates research, development, and innovation activities.
- Oversees group financing and investment activities.
- Manages IP and technology ownership, product development, etc.
- Develops brand, marketing, and communications strategy.
- Sets and oversees the Country or Region level mandates.

## 2. CRDC COUNTRY OR REGIONAL LEVEL

- Implements the Global strategy and mandate in the local context.
- Product testing, certifications, and lifecycle assessments.

## 3. PLANT LEVEL

- Operational manufacturing entity



# RESIN8™ PLANT COMPARATIVE ADVANTAGES



## EFFICIENT

**Cost:** competitive CAPEX to output ratio.

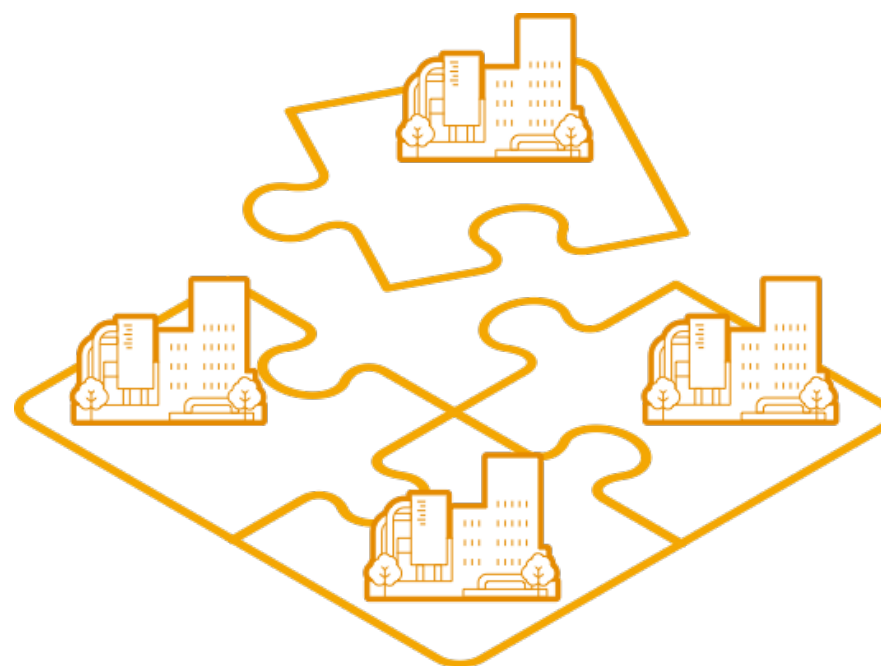
**Physical footprint:** small physical footprint relative to output capacity.

**Environmental footprint:** when considering the avoided burden of other plastic disposal options, CRDC Costa Rica's life cycle analysis indicates net negative global warming potential to output efficiency.



## MODULAR AND SCALABLE

With commercial viability starting at a production capacity of around 1.5 tons per hour, on the smaller end, and the ability to go up to 4.5 tons per hour, on the bigger end, **CRDC's** modular **RESIN8** plants can **easily be scaled up or down** to service a wide range of different size markets.



## PROXIMITY ECONOMICS

The supply and demand metrics to support a commercial scale **RESIN8** plant can be found in almost **any** urban population center with > 500,000 people. **Meaning they can be located in almost every city around the globe.**

As light industrial facilities, **RESIN8** plants are typically located within the urban center. Proximity, to both the plastic waste supply sources and the localized construction product manufacturers, gives **RESIN8** plants a comparative advantage over:

- almost all alternative plastic disposal options; and
- over many building material supply options.

**This has a direct, beneficial impact on transportation related costs and fossil fuel based carbon emissions.**



# EXAMPLES OF HYPOTHETICAL RESIN8™ USE CASES



## Concrete Blocks

Up to 5% **RESIN8** per block  
Exceed compression strength ASTM C90 (psi 3,080 vs 2,000) 2.5 x the insulation of standard fine aggregate ASTM C518.  
Exceed Fire resistance ASTM E119.  
Equivalent of 10 plastic bottles per block.



## Concrete Benches

Up to 10% **RESIN8**.  
Equivalent of 96 plastic bottles per 180 lb bench.



## Water feature

Up to 25% **RESIN8**.  
Equivalent of 2,655 plastic bottles per 2000 lbs.



## Ready Mix Concrete

**RESIN8 CORE** is in development.  
Estimated 351 bottles per metric ton @ 3% mix, and sequesters carbon.



## Pavers

Up to 25% **RESIN8** per paver.  
Equivalent of 13 plastic bottles per 10 lb paver.



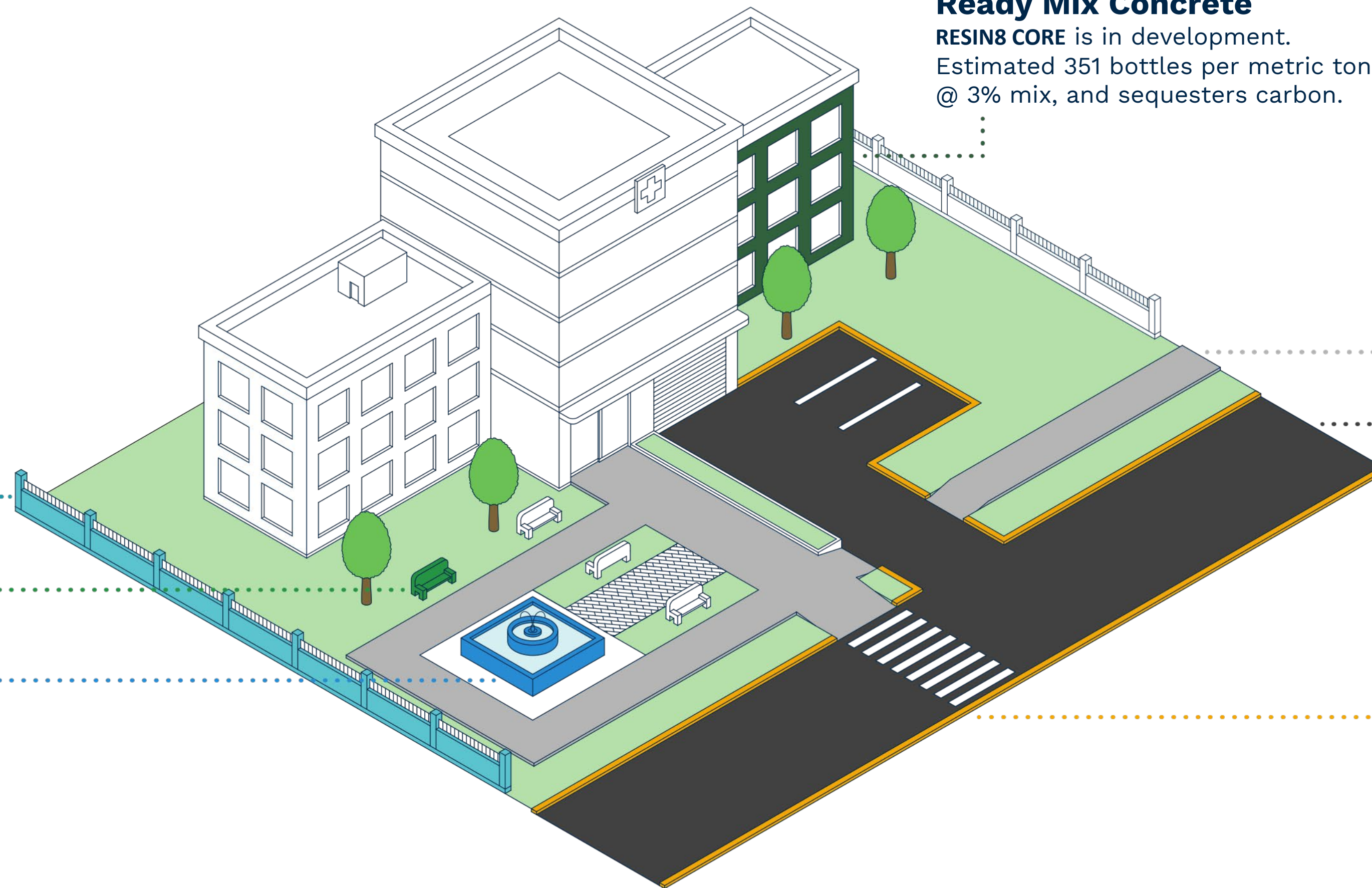
## Asphalt Road

Up to 3% **RESIN8**  
Increase in the stiffness and mechanical properties of the asphalt mix, leading to increased life expectancy of the pavement.  
Equivalent of 35 plastic bottles per sq ft.



## Curb Stones

Up to 10% **RESIN8** per stone.  
Equivalent of 72 plastic bottles per 135 lbs curb.



**Notes:**

**RESIN8** replacement is by volume not by weight.  
Plastic bottles calculated based on 16oz bottle.



# CONCRETE TESTING AND CERTIFICATION - 1



RESIN8™ products have been tested in hundreds of different mix designs and end-product applications, against a wide array of local and international standards. Below are a handful of ASTM and related test category summaries, which serve as international benchmarks:

## COMPRESSION STRENGTH AND WATER ABSORPTION

**Standard Specification:** ASTM C90-16a

**Test body:** National Concrete Masonry Association (NCMA)

**Unit description:** Concrete Masonry Unit (8x8x16 inch)

**Results:**

	% RESIN8	Achieved	Required
Compression Strength	3% replacement	3350 psi	2000 min
Water Absorption	3% replacement	7.9 pcf	13 max

	% RESIN8	Achieved	Required
Compression Strength	5% replacement	3080 psi	2000 min
Water Absorption	5% replacement	8.6 pcf	13 max

## FIRE RESISTANCE

**Standard Specification:** ASTM E119

**Test body:** VTEC Laboratories

**Unit description:** Block wall using 8x8x16 hollow concrete masonry units

**Results:**

	% RESIN8	Achieved	Required
Fire Resistance	5%	2 hrs, 45 min	2 hrs

## THERMAL RESISTANCE

**Standard Specification:** ASTM C518-17

**Test body:** INTERLEK

**Unit description:** 100% RESIN8 - Insulating Aggregate Material (Material held in 1.5x12x12 wood frame)

**Results:**

	RESIN8	Standard Block Sand
Average thermal resistance - R (hr·ft <sup>2</sup> ·°F / Btu)	2.36	0.86

# CONCRETE TESTING AND CERTIFICATION - 2



## MICRO PLASTIC RELEASE

### Test body:

Dynatest Heavy Vehicle Simulator (HVS) Mark VI at the PaveLab of the National Laboratory of Materials and Structural Models of the University of Costa Rica (LanammeUCR).

### Unit description:

A8 paver (80mm thick) containing 10% RESIN8 per volume of aggregate.

### Experimental Design:

HVS trafficking was applied to four pavement structures. Three using different sands and an A8 paver containing 10% RESIN8. Axle loads corresponding to a single load of 40 kN was applied on a single axel dual tire configuration. The number of load repetitions was selected at 250,000-bidirectional passes, allowing for 10,000 load repetitions per day. Paver samples were taken from the trafficked and non-trafficked test tracks in order to compare their mass loss and relate it to the micro-plastic release potential.

### Results:

0.094% of the recycled plastic used to construct the pavers could potentially be converted into micro-plastics.

Avg paver volume loss after 25 years	Plastic lost per paver per year	Avg paver volume loss per sqm pavers per year	Plastic per sim of pavers	Micro Plastic release potential
2.35 %	0.058 g	2.9 g/m <sup>2</sup>	3.075 g/m <sup>2</sup>	0.094 %

### Conclusion:

The Accelerated Pavement Test (APT) experiment represents the most abrasive conditions possible and the potential micro-plastic release was very low. It can also be concluded that the release of micro-plastics would be negligible in non-abrasive conditions such as with Concrete Masonry Units (CMUs) that are usually covered by a sand-cement mortar. Even in cases where CMUs are exposed, they are not normally subjected to any recurrent abrasive process, therefore their MPRP is also considered negligible. At the end of their useful life, crushing and reutilization is expected for both pavers and CMUs ensuring that all the material, including the plastic component of RESIN8 will be effectively recycled for further use in the construction industry.

# ASPHALT TESTING AND CERTIFICATION



## RESIN8 PERFORMANCE IN HOT MIX ASPHALT

**Test body:** CACISA Laboratories, OJM Laboratories, Mat-Tech Engineering and Materials Science, PAVICEN, Globalvia. Performance Testing at Laboratory, Full-Scale Accelerated and In-service Assessment.

**Unit description:** Hot-Mix Asphalt (HMA) modified with RESIN8.

### Experimental Phases and Treatments:

Phase	Experiment Type	Experimental Treatment
I	Full-scale Accelerated Pavement Test (APT) at the National Laboratory of Materials and Structural Models of the University of Costa Rica (UCR) facility	3% RESIN8-HMA
II	Laboratory analysis	Various RESIN8 contents. Three experimental laboratories: CACISA, Mat-Tech and OJM
III	Full-scale test tracks at PEDREGAL fairgrounds	Control HMA
III		3% RESIN8-HMA
III		6% RESIN8-HMA
IV	Full-scale test tracks at Route 27 highway	Control HMA
IV		1% RESIN8-HMA
IV		2% RESIN8-HMA
IV		2% RESIN8-HMA

### Overall Conclusions:

A comprehensive study was carried out over 30 months to assess the effect of the incorporation of RESIN8 as an additive for HMA. The test results show that the RESIN8-HMA treatments accomplished all the Costa Rican standard specifications. The RESIN8-HMA treatments increased the asphalt stiffness by acting as a normal asphalt additive without jeopardizing other material properties such as the fatigue strength or the moisture damage resistance.

**Marshall Stability:** All the mixes accomplished the minimum Costa Rican spec of 800 kg. The stability value was seen to increase as the RESIN8 percentage grew. As RESIN8 mixes with the asphalt binder, it increases viscosity and stiffness.

**Marshall Flow:** All the treatments met the specification demonstrating that the incorporation of RESIN8 did not jeopardize this mix property.

### HMA Volumetrics:

- Air voids. The Marshall specimens' air void content showed an increasing trend which is usual for Costa Rican mixes. It also occurred at the control mixtures.
- VMA. The VMA of all the experimental treatments met the minimum specification of 14,0. All of the RESIN8 mixtures showed values much higher than 14,0, which is an indication of a mix with high capacity to accommodate air voids and effective asphalt content.
- VFA. All the experimental treatments met the Voids Filled with Asphalt (VFA) Costa Rican specifications.

# FORWARD FASTER IN GLOBAL PARTNERSHIP



# FORWARD FASTER WITH REAP EDUCATION



## **CRDC FOUNDATION introduces children to the circular economy and the nine Planetary Boundaries in the REAP Circular Economy Education Program.**

REAP education gives teachers a free interactive lesson plan that empowers children to recognize and protect our world's finite resources.

Participating students are invited to enact REAP at home with The Bag That Builds™, a branded bag to collect mixed plastic waste from their families and neighbourhoods.

Children return filled bags to school where CRDC partners remove recyclables and transfer the remainder to CRDC Global for reuse in RESIN8™.



# FORWARD FASTER WITH PLASTIC CREDITS

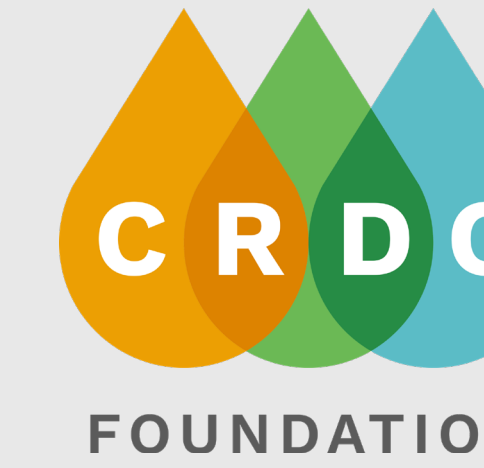


**State-of-the-art digital tracking allows us to issue verified plastic credits for the plastics we recover, recycle & reuse in RESIN8™, unlocking new revenue for collection.**

The emerging international market for transparent, auditable, and verifiable plastic credits allows buyers to support the CRDC mission from anywhere in the world.

We partner with Ecocircle for credit preparation and sale following the Plastic Pollution Reduction Standard (PPRS) from PCX Solutions.

Finboot tracks all credits issued and sold in a secure blockchain ledger.



# FORWARD FASTER WITH SOCIAL HOUSING



**We share the mission of Habitat for Humanity and dedicated social housing advocates everywhere.**

By recovering plastics that might otherwise pollute our earth's lands and waters, and enriching those plastics into **RESIN8™**, we support the construction industry to build better.

Structures made with **RESIN8™** are more sustainable, and more energy efficient, making them appreciate in value for the families who call them home.

That is the essence of our **REAP** framework:  
We **Recover**, **Enrich**, and **Appreciate** so ALL may **Prosper**.



**Valle Azul | Costa Rica**



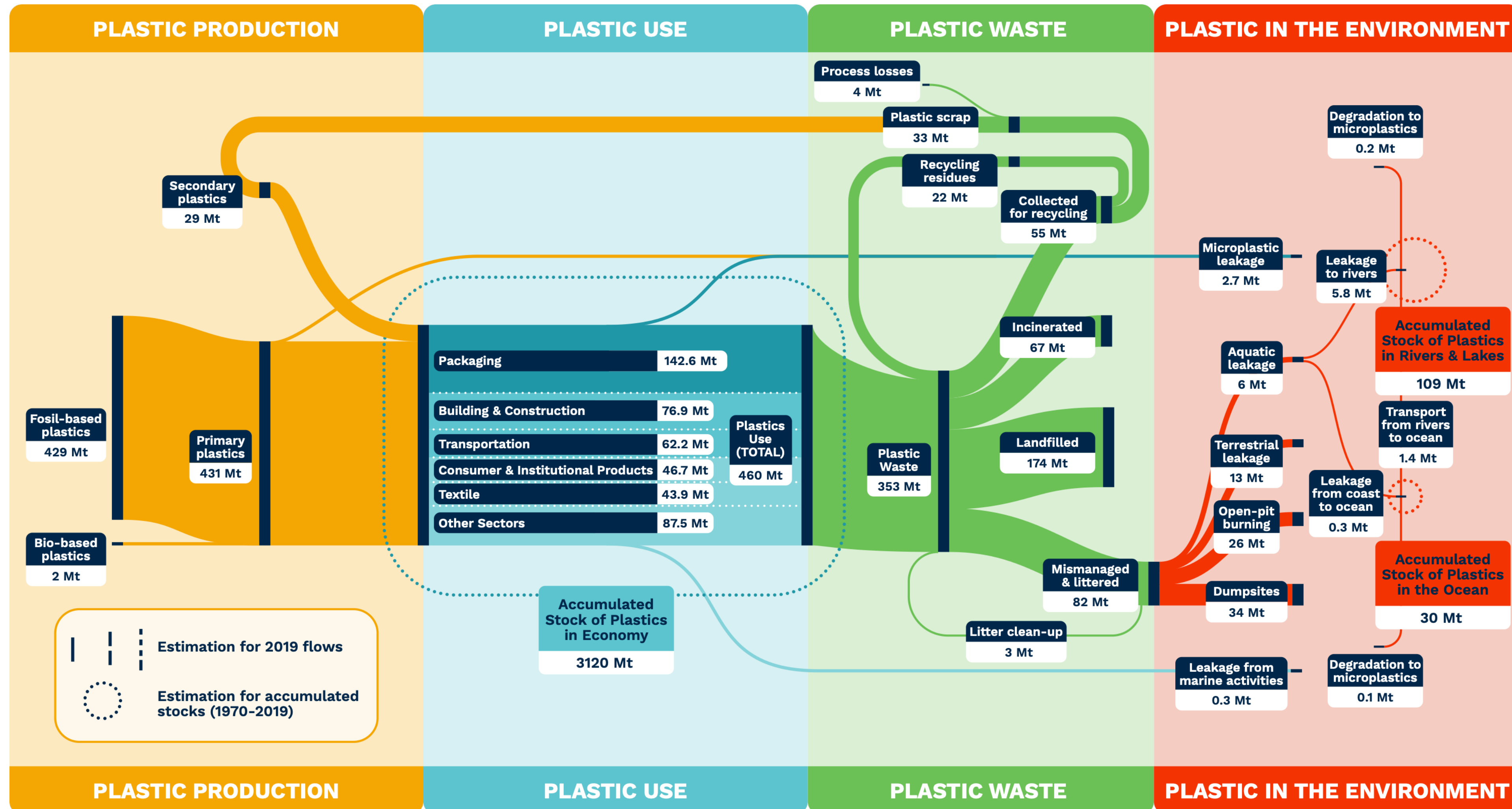
**100M Pisos | Guatemala**



**100M Pisos | Costa Rica**

# PLASTIC POLLUTION SOURCES

Flows of plastic in the global plastic life cycle, and losses to and accumulated stocks in the environment.







*“Now that we have a ZERO WASTE solution to our un-managed plastic problem, we have a massive responsibility to make it happen at scale.”*

**Donald Thomson**  
Founder CRDC Global

[www.crdc.global](http://www.crdc.global)