

# AN ALTERNATIVE TO CURRENT SUPPLY CHAIN PROCESSES IN THE BANANA VALUE CHAIN

Our ability to eliminate single-use packaging in the banana value chain can save \$188,000,000 annually in the banana sector of Costa Rica alone as the following numbers from [Earth University](#) indicate:

## Banana Cost Structure for Costa Rica

### Bananas Main Data

| Description       | Quantity | Unit                 |
|-------------------|----------|----------------------|
| Production Area   | 44,000   | ha                   |
| Production Volume | 110      | Million Boxes        |
| 1 box bananas     | 18.86    | kg green fruit       |
| 1 container       | 20       | wooden pallets       |
| 1 wooden pallet   | 54       | boxes                |
| 1 container       | 20368.8  | kg green fruit       |
| 1 container       | 1080     | carton boxes         |
| 1 pallet          | 5.5      | plastic corner posts |
| 1 container       | 110      | plastic corner posts |
| 1 box             | 1        | bag                  |
| 1 container       | 1080     | bags                 |

| Banana Cost Structure: | Producer      |               | Materials                            | Value/box     | % of Cost               |
|------------------------|---------------|---------------|--------------------------------------|---------------|-------------------------|
| Productivity           | 2600          | boxes/ha/year | Others                               | \$0.10        | N/A                     |
|                        |               |               | Carton Box                           | \$1.35        | 17.87%                  |
| Fixed Costs            | \$10,200.00   | ha/year       | Bag                                  | \$0.09        | 1.19%                   |
| Variable Costs         |               |               | Corner Posts                         | \$0.07        | 0.93%                   |
| Harvesting Labor + Mat | \$0.57        | per box       | Wooden Pallet                        | \$0.19        | 2.52%                   |
| Packing Labor          | \$0.85        | per box       | Plastic Wrap                         | \$0.01        | 0.13%                   |
| <b>Materials</b>       | <b>\$1.81</b> | per box       | <b>Total Materials</b>               | <b>\$1.81</b> | <b>22.64%</b>           |
| Transport + Port Costs | \$0.40        | per box       |                                      |               |                         |
| Total Variable Costs   | \$3.63        | per box       | <b>Value of Eliminated Materials</b> |               |                         |
| Fixed Cost per box     | \$3.92        | per box       | Description                          | Value         |                         |
| Total Cost per box     | \$7.55        | per box       | Carton Box                           |               | \$148,500,000.00        |
|                        |               |               | Bag                                  |               | \$9,900,000.00          |
|                        |               |               | Corner Posts                         |               | \$7,700,000.00          |
|                        |               |               | Wooden Pallet                        |               | \$20,900,000.00         |
|                        |               |               | Plastic Wrap                         |               | \$1,100,000.00          |
|                        |               |               | <b>TOTAL</b>                         |               | <b>\$188,100,000.00</b> |

This is a scalable system that will work for any value chain in any country. By allowing deliveries and pickups simultaneously along any leg of the supply or reverse chains, empty backhauls and partial loads can be eliminated along with most transport packaging as we begin the actual development of a circular economy. A reusable, modular, end-to-end supply chain system that can eliminate 90% of the aisles in your DC and is totally complimentary to existing operations. For more information please visit our website at [www.circularsupplychains.com](http://www.circularsupplychains.com), send us an email to [info@circularsupplychains.com](mailto:info@circularsupplychains.com) or contact us directly at 1-403-606-6647.