

# **CLAC PRODUCTIVITY IMPROVEMENT PROGRAM (PIP) BACKGROUND, STRATEGY AND RESULTS**

**June 2019**



# BACKGROUND



## Bananas and their origin

- ❑ Bananas originated in Southeast Asia, specifically in the jungles of Malaysia, the Philippines and Indonesia, locations where bananas continue to be produced.
- ❑ Bananas grew naturally in forested areas in very low densities, in a biodiverse environment and with a natural balance, in which the natural ecosystem provided natural mechanisms for resistance and defense against the primary phytopathogens that are currently affecting their production.
- ❑ As a tropical fruit with high demand and popularity in international markets, producers began to grow bananas in unshaded monoculture systems, and loading them with agrochemicals to increase production. This resulted in the degradation of the natural microbiological fauna in the soil, causing the soil to lose its natural health and provoking significant imbalances in the soil's microbiological biodiversity.

# BACKGROUND



## Global context of the banana industry

- ❑ 8<sup>th</sup> most important food crop in the world.
- ❑ 4<sup>th</sup> most important food crop in developing countries.
- ❑ Produced in 135 countries across the tropics and subtropics.
- ❑ Annual production estimated at 130 million metric tons of bananas grown on 5 million hectares, and 37 million metric tons of plantains grown on 5.4 million hectares.
- ❑ World's most commercialized fruit: 15% (18.7 million metric tons) is exported, 85% is for domestic markets and/or self-consumption.

# BACKGROUND



## Productivity of small producers

- ❑ The handling of dysfunctional fertility programs not adapted to production conditions and the excessive use of agrochemicals in conventional production by the region's small producer organizations have generated a significant loss in soil fertility and the inability to obtain profitable, sustainable productivity levels.
- ❑ This has jeopardized competitiveness of Fairtrade small growers in the international market, with average productivity of 1,097 boxes/hectare/year, equivalent to 57% of their estimated potential.
- ❑ Due to their low productivity, small banana growers confront a major threat resulting from growing competition in terms of quality and prices, as large and powerful stakeholders have also been positioning themselves on Fairtrade banana market.

# Productivity Baseline of Fairtrade Small Producers 2015



Country	Area (Has)	Productivity (boxes/ha/year)		
		Estimated potential	Actual 2015*	% of potential
Colombia	5,451	2,500	1,696	68%
Costa Rica	812	2,500	1,290	52%
Ecuador	6,752	1,750	943	54%
Panama	550	2,500	1,805	72%
Peru	6,930	1,800	1,339	74%
Dominican Republic	14,698	1,750	806	46%
Winward Islands	1,280	1,750	450	26%
<b>Weighted Average</b>	<b>36,473</b>	<b>1,900</b>	<b>1,079</b>	<b>57%</b>

\*Mel Banana Report 2015

# BACKGROUND



## Causes of low productivity

Conclusions from prior diagnostic assessment point to the following specific areas affecting productivity:

- **Irrigation:** Hydric deficit and minimally technified irrigation systems  
→ **Action to be undertaken:** Institutional intervention and support
- **Fertility:** Deficient programs that are out of balance with the crop needs in each region  
→ **Action to be undertaken:** Technological transfer/Training, PIP
- **Population management:** Poor management of density of plants per hectare in accordance with potential of soil, and climate and distribution  
→ **Action to be undertaken:** Technological transfer/Training, PIP
- **Pre-harvest:** Deficiencies in carrying out pre-harvest work, directly affecting exploitation and yields of bananas and their final quality  
→ **Action to be undertaken:** Supervision of producer organizations



# STRATEGY OF INTERVENTION



## What does the PIP do?

It disseminates and transfers technologies for optimizing agronomic management of banana production systems:

- 1. Improving fertility programs, based on and complemented with a Soil Health program.**
- 2. Population Management and Planting Systems.**
- 3. Pre-harvest.**

# STRATEGY OF INTERVENTION



## Use of organic matter and combinations of bioferments in crop production

### Objectives:

1. Increase farm production following an organic production scheme → Increase plant vigor and return
2. Recuperate soil health, thus increasing the production potential of soils depleted due to excess use of agrochemicals over time.
3. Decrease use of agrochemicals on Conventional Farms, by at least 50%.
4. Increase productivity on each Farm.





# SCOPE OF THE PROGRAM



## Direct beneficiaries of PIP

	2017					2018				
Countries	Visits	SPOs	Producers	Staff	Total	Visits	SPOs	Producers	Staff	Total
Colombia	2	5	21	8	29	3	5	22	12	34
Costa Rica	4	1	25	24	49	4	1	20	5	25
Ecuador	3	5	65	31	96	2	5	50	20	70
Panama	4	1	30	9	39	4	1	35	12	47
Peru	1	6	0	6	6	3	6	47	104	151
Dom. Rep.	2	6	39	15	54	2	6	23	16	39
Winward Islands	1	2	5	3	8	2	2	5	3	8
<b>Total</b>	<b>17</b>	<b>26</b>	<b>185</b>	<b>96</b>	<b>281</b>	<b>20</b>	<b>26</b>	<b>202</b>	<b>172</b>	<b>374</b>

- The program started in 2015 with 20 producer organizations. The technical assistance program expanded by 30% to 26 organizations in 2017 and 2018.
- Initially, the program was projected to provide direct assistance to 52 producers. It expanded to assisting 281 producers and technicians in 2017, and 374 persons in 2018.
- Apart from direct beneficiaries, a significant number of producers also participate in field visits and trainings provided by the program.



# PIP RESULTS



# PIP RESULTS – PRODUCTIVITY



## PRODUCTIVITY INCREASE IN THE 4 MAIN PRODUCER COUNTRIES

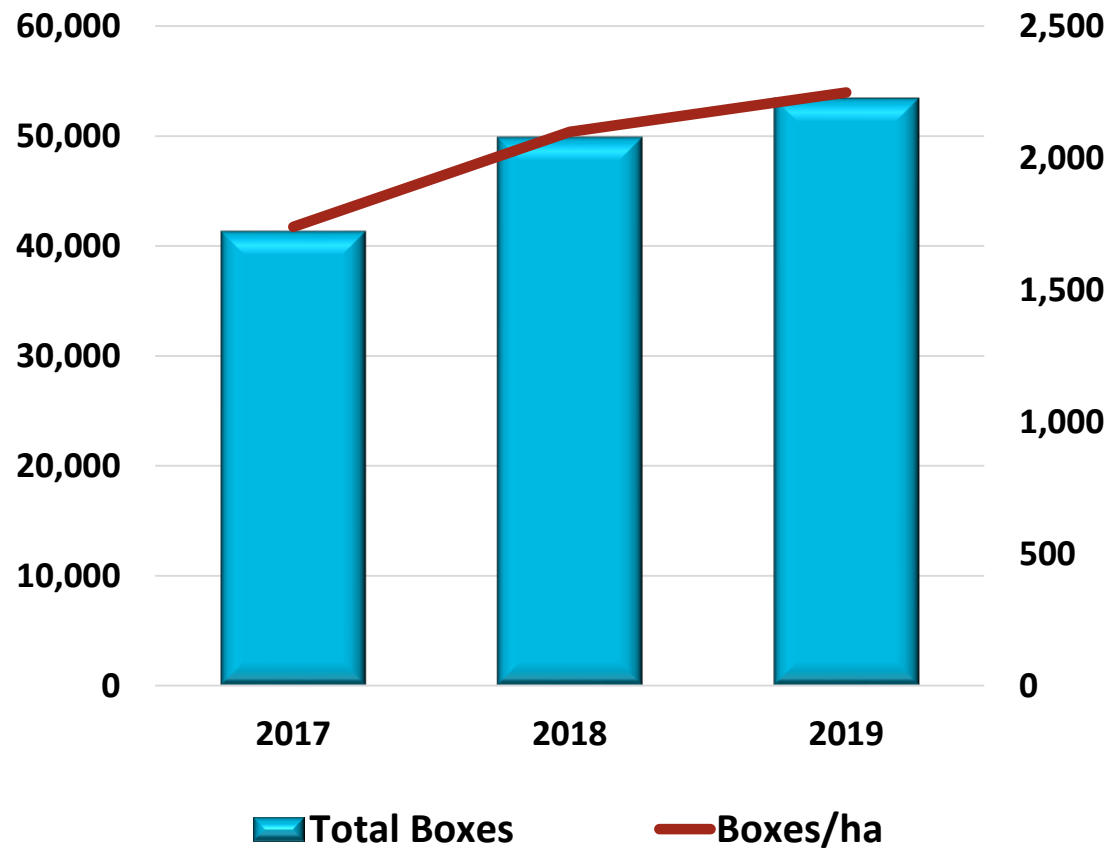
COUNTRY	UNIT	AREA*	2017	2018	2019	INCREASE
Colombia	Total boxes	24	41,352	49,897	53,463	29%
	Boxes/ha		1,740	2,099	2,249	
Ecuador	Total boxes	36	56,905	70,419	77,135	36%
	Boxes/ha		1,601	1,981	2,170	
Peru	Total boxes	6	6,580	10,847	11,446	74%
	Boxes/ha		1,053	1,736	1,831	
Dominican Republic	Total boxes	30	43,524	52,327	60,323	39%
	Boxes/ha		1,451	1,744	2,011	
TOTAL		96	148,362	183,489	202,366	36%
			1,553	1,920	2,118	

\*Area monitored in each country

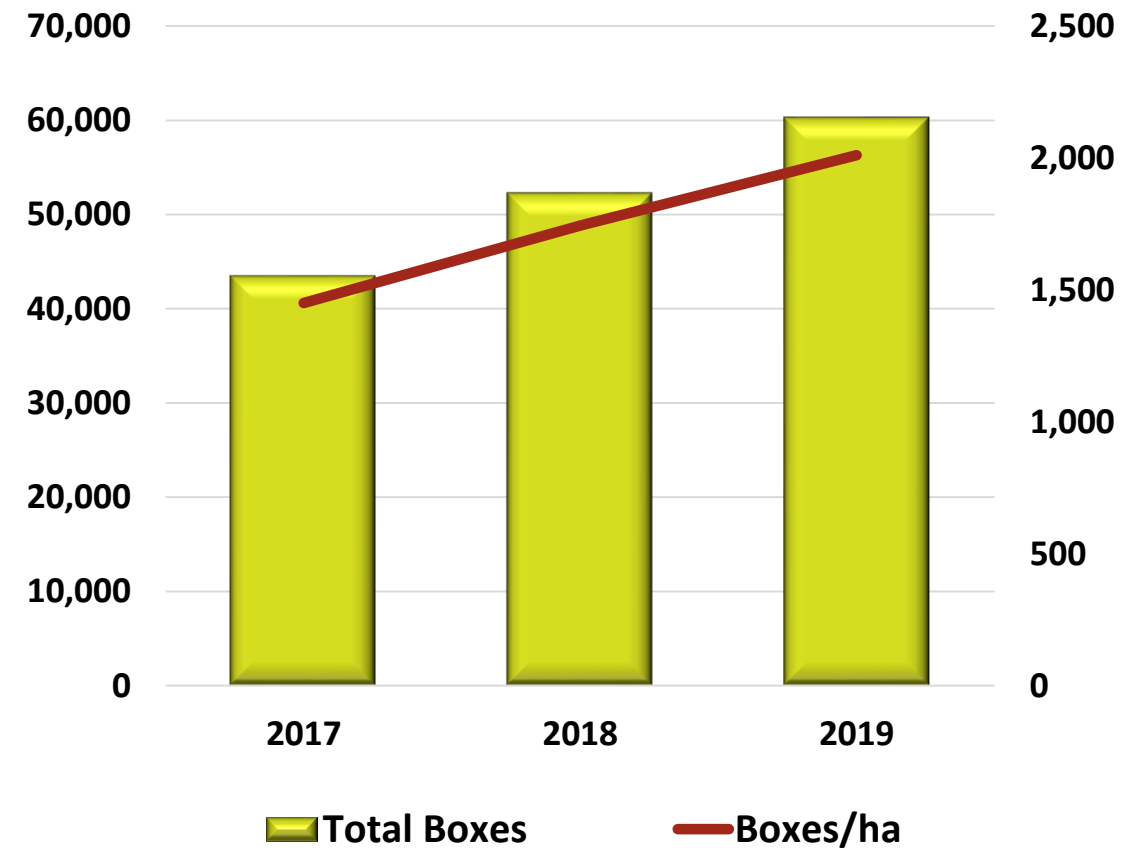
# PIP RESULTS – PRODUCTIVITY



## Colombia



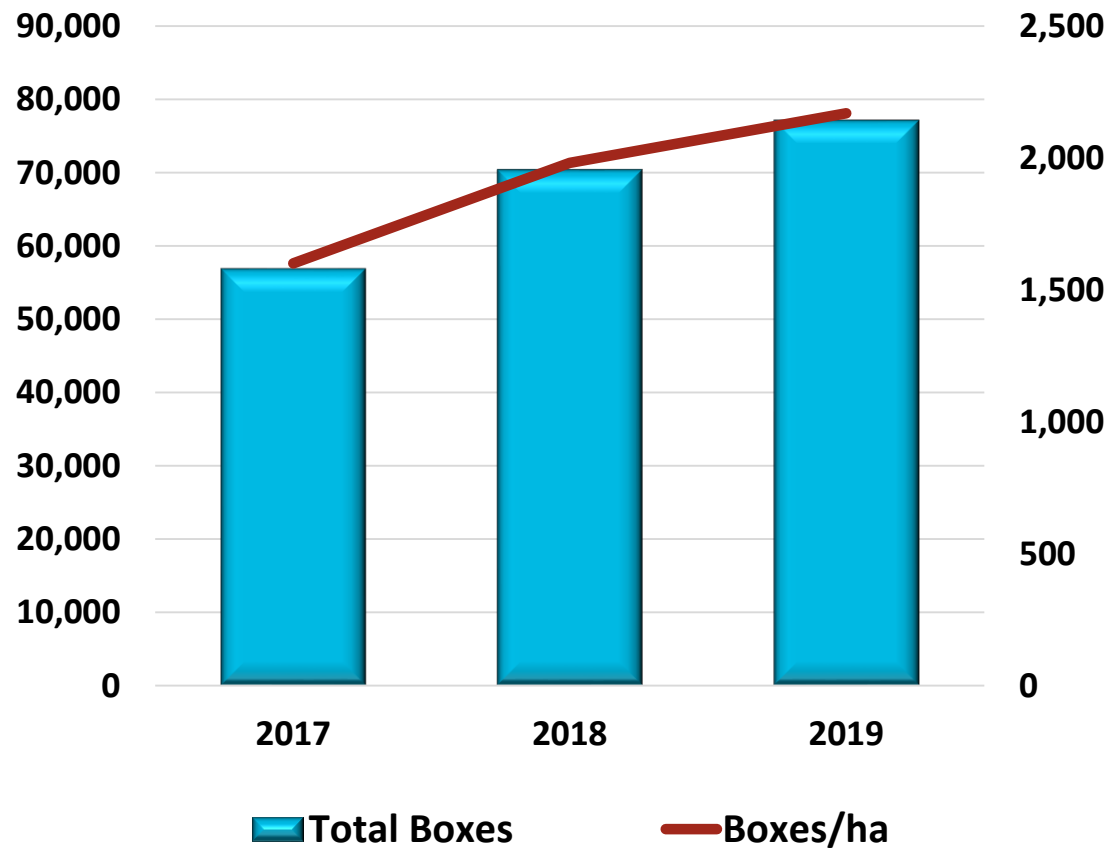
## Dominican Republic



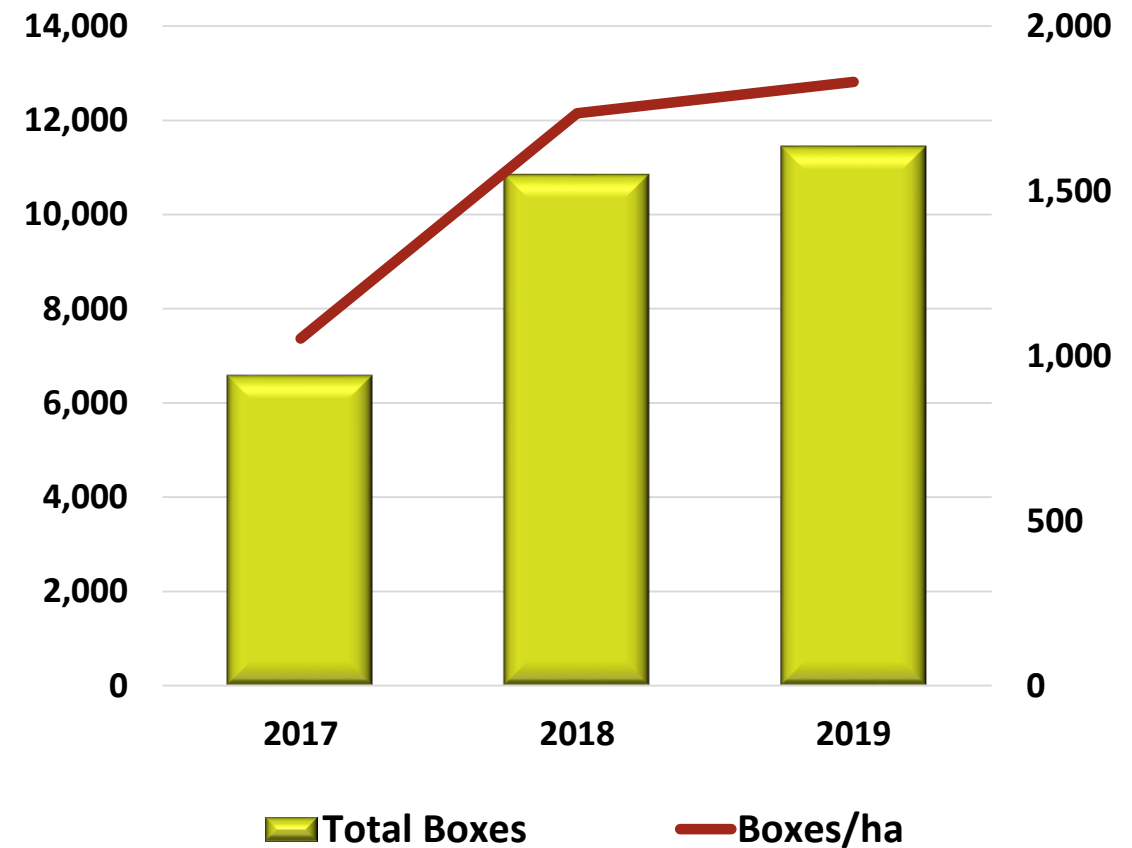
# PIP RESULTS – PRODUCTIVITY



## Ecuador



## Peru





# PIP RESULTS – PRODUCER INCOME



## IMPACT ON FARMERS' INCOMES BASED ON 1 HECTARE (Average of 4 main origins)

	Fixed cost/ha - 2016		\$8,600		INCREASE IN INCOME			
Year	Production (boxes/ha)	Increase (boxes/ha)	Fixed Cost/Box (USD)	Reduction of fixed costs per Box	Reduction of costs per Hectare (A)	Average Price (EXW)	Additional Income based on production (B)	Total additional income (A+B)
2016	1,553	0	\$5.54	\$0.00	\$0	\$6.55	\$0	\$0
2017	1,920	367	\$4.74	\$0.80	\$1,532	\$6.58	\$2,415	\$3,947
2018	2,118	198	\$4.30	\$0.44	\$938	\$6.53	\$1,293	\$2,231
Total	+36%	565	-	\$1.24	\$2,471	-	\$3,708	\$6,179

# PIP RESULTS – PRODUCER INCOME



**The project's impact in productive and economic terms is reflected in three aspects, based on increased productivity:**

- A production increase of 565 boxes per hectare on average, after 2 years, translates into a significant reduction in fixed costs of \$1.24/box, with a projected reduction in costs of \$2,471/hectare.
- An increase of \$3,708/hectare in producers' gross income, in consideration of the official FTMP EXW for the 565 boxes of increased production.
- The project's economic impact for producers and the organization is thus on average of \$6,179/hectare, after 2 years.
- On top of that, Producer Organizations can generate up to \$565 additional Fairtrade Premium per hectare if the additional volume is sold under Fairtrade terms.

# PIP – OTHER RESULTS

In addition to the results in increased production, the following conditions have been generated in all participating countries:

- ✓ **Soil improvement:** The rational management of fertility programs, complemented by the incorporation of beneficial micro-organisms and bioproducts with phyto-protection and bio-fertilization mechanisms, returns the soil's productive capacity.
- ✓ **Reduction in use of agrochemicals:** PIP soil health program has achieved a significant reduction of more than **35%** in the use of agrochemicals, and this has made it possible to **decrease the carbon footprint**.
- ✓ **Reduction in water used in irrigation:** Frequency of irrigation was reduced by **50%**, which contributes to the **reduction of water footprint**





# PIP – OTHER RESULTS

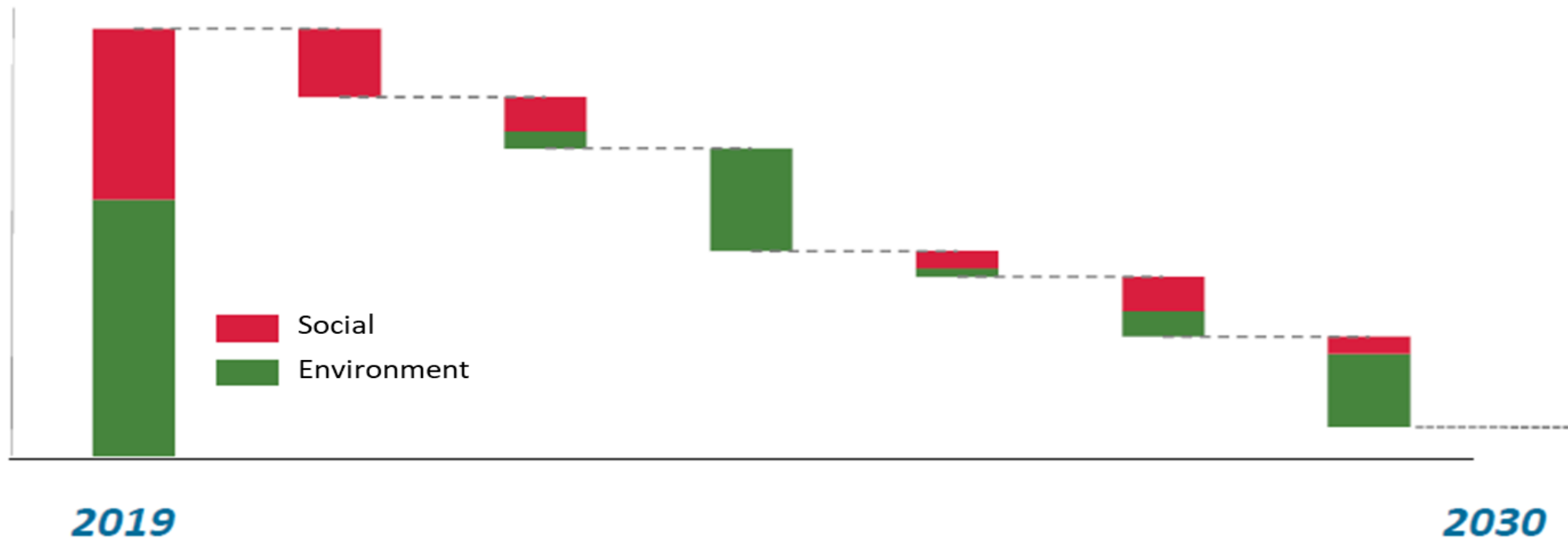
- ✓ **Increase in soil's biological biodiversity:** PIP soil health program has allowed an increase in the biological diversity of soils in treated land plots of more than 300% during the first twelve months of treatment.
- ✓ **Improved defense mechanisms for plants:** Compounds based on these micro-organisms that are incorporated into soil and plants induce plants to improve their mechanisms of resistance and tolerance to attack by fungi, viruses and bacteria that cause diseases in this crop.



# REDUCTION OF EXTERNALITIES



The combined impacts on producer income as well on the reduction of environmental externalities of banana production, make PIP is a powerful tool to help the banana industry reduce its external costs and contribute to the Sustainable Development Goals (SDGs).





# CONTRIBUTION TO SDGs

Overall, PIP contributes to the following SDGs







Colombia



Colombia



Ecuador



Ecuador





Peru



Winward Islands



Dominican Republic



Dominican Republic





# THANK YOU



Pequeños Productores y Trabajadores por un Comercio Justo