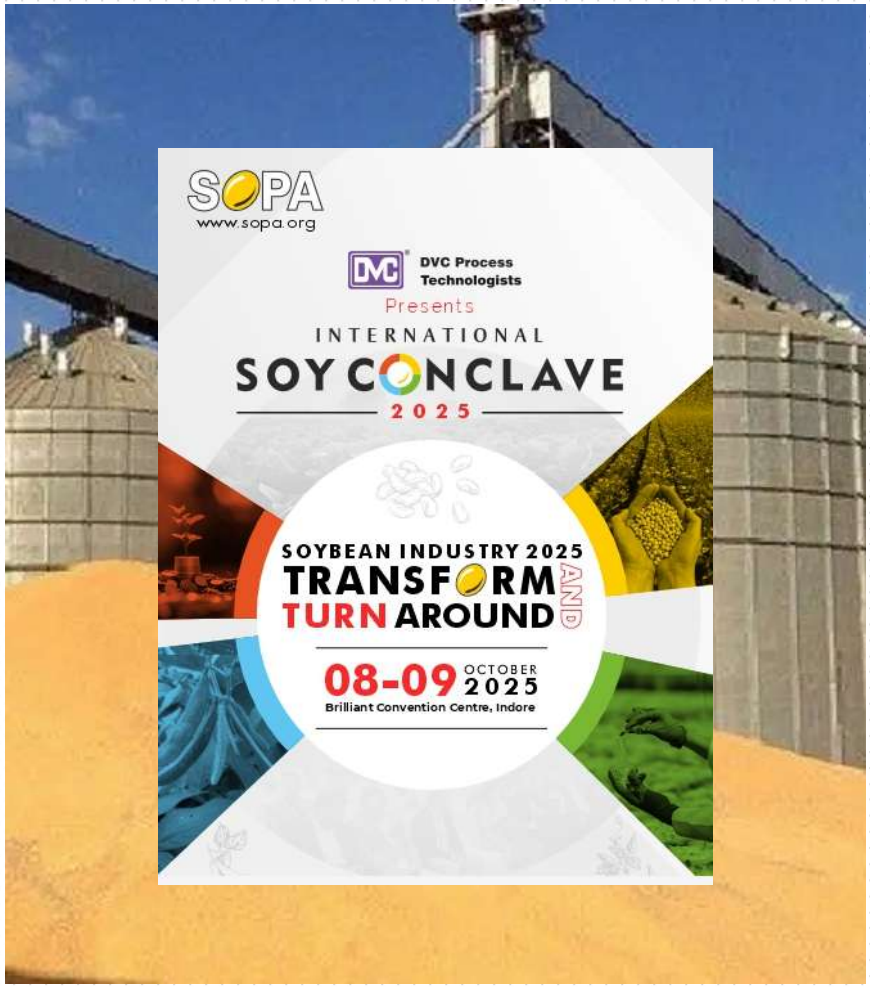
SOY CONCLAVE 2025

Continuous Improvement
in Soybean Grain Handling & Crushing Plants



Gonzalo J. Luvani
Founder & Senior Consultant – LYSPAS & CO
Continuous Improvement Solutions
ARGENTINA

Continuous Improvement
in Soybean Grain Handling & Crushing Plants

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

"Efficiency is the only raw material that never runs out"

Crushing capacity has grown faster than soybean supply.

How can we make the most of every ton of grain?

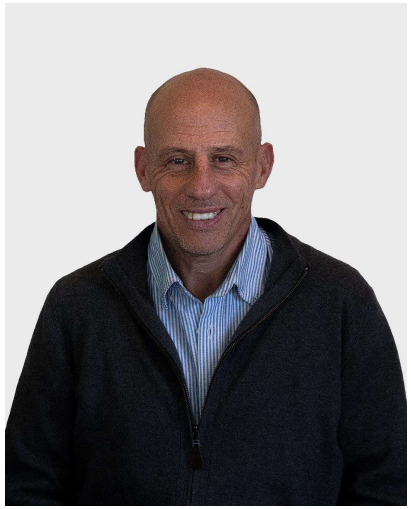
Practices from Argentina that may inspire new opportunities in India."

Continuous Improvement
in Soybean Grain Handling & Crushing Plants

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

Gonzalo J. Luvani,
Industrial Engineer., MBA, MSc in Continuous Improvement

ROSARIO, ARGENTINA



Founder & Senior Consultant – LYSPAS & CO Continuous Improvement Solutions
Industrial Engineer with over 30 years of experience in the agri-food and oilseeds industry.

MBA and Master's in Continuous Improvement specialized in implementing operational excellence systems.
Former Global Operations and Continuous Improvement Leader at Cargill, with experience across Argentina, Brazil, USA, China, Mexico, UK, and Egypt.

"Passionate about helping soybean processors improve operational performance using practical, low-cost, high-impact continuous improvement tools, adapted for local realities."

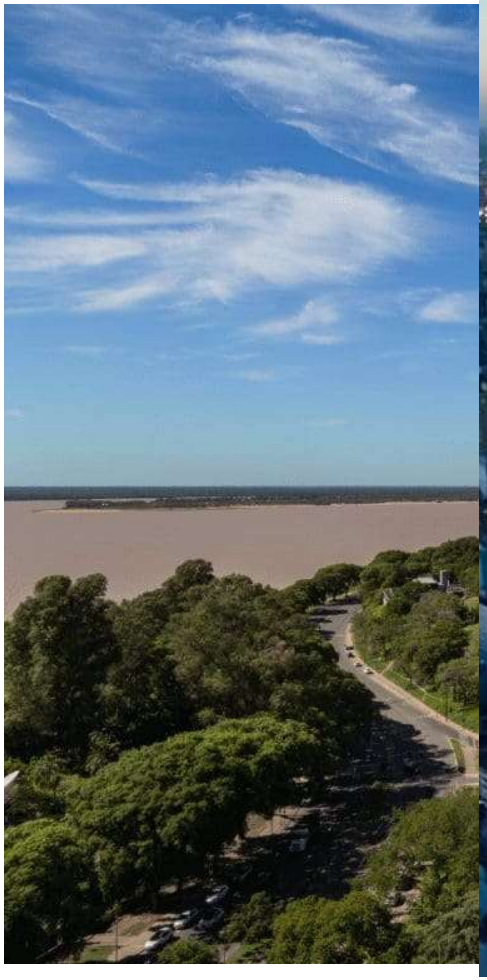
SCAN QR CODE TO FOLLOW THE PRESENTATION

Continuous Improvement
in Soybean Grain Handling & Crushing Plants

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ - WasteZero™ - FlowStable™ - Kaizen Action™ - StratBridge™

ROSARIO, MY HOMELAND

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ - WasteZero™ - FlowStable™ - Kaizen Action™ - StratBridge™



Continuous Improvement
in Soybean Grain Handling & Crushing Plants

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ - WasteZero™ - FlowStable™ - Kaizen Action™ - StratBridge™

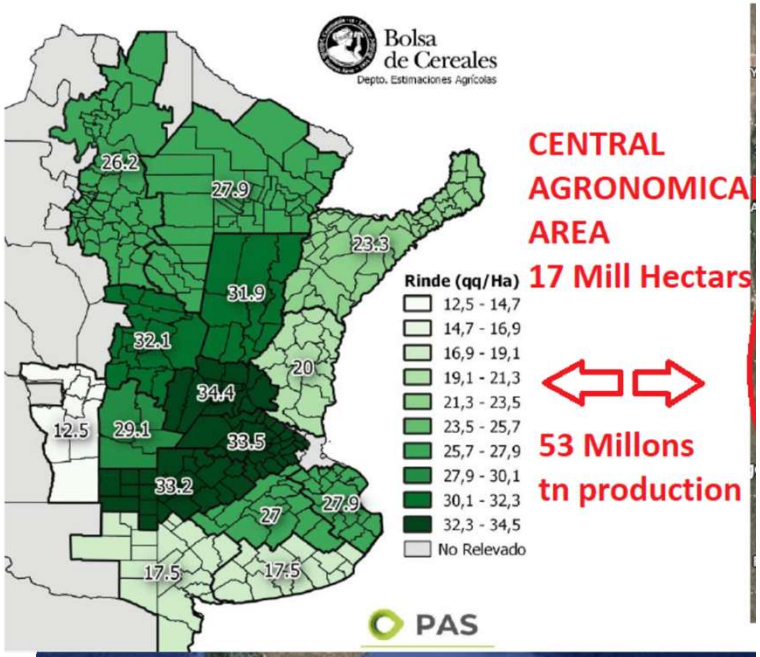
India is about 1.2 times *bigger* than Argentina.

Argentina is approximately 2,780,400 sq km, while India is approximately 3,287,263 sq km, making India **18% larger** than Argentina. Meanwhile, the *population* of Argentina is ~46.2 million people (1.3 billion *more* people live in India). We have positioned the outline of Argentina near the middle of India.

Continuous Improvement
in Soybean Grain Handling & Crushing Plants

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ - WasteZero™ - FlowStable™ - Kaizen Action™ - StratBridge™

Rendimientos Soja
* Rendimiento promedio nacional: 29,4 qq/Ha



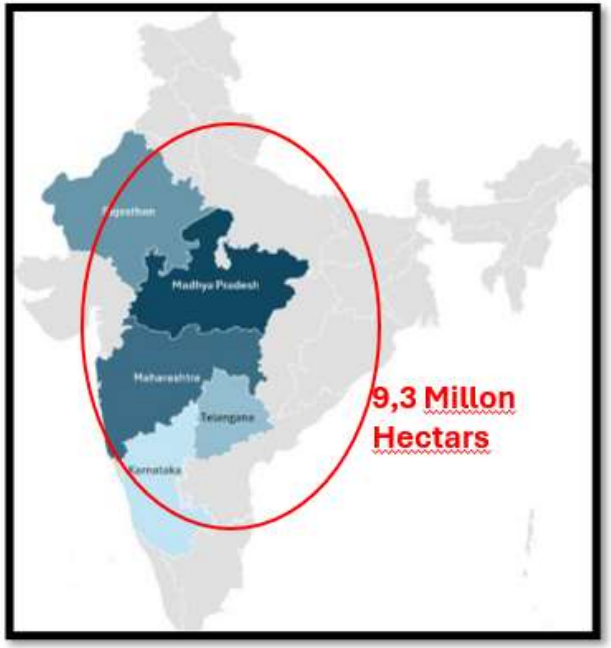
CENTRAL AGRONOMICAL AREA
17 Mill Hectars

⇦⇨

53 Millons tn production

INDIA GROWING AREA

Map 1A: India's Top Soybean and Rapeseed Producing States



Source: Soybean Processors Association of India (SOPA) and ICAR-Indian Instiute of Rapeseed Mustard Reserach

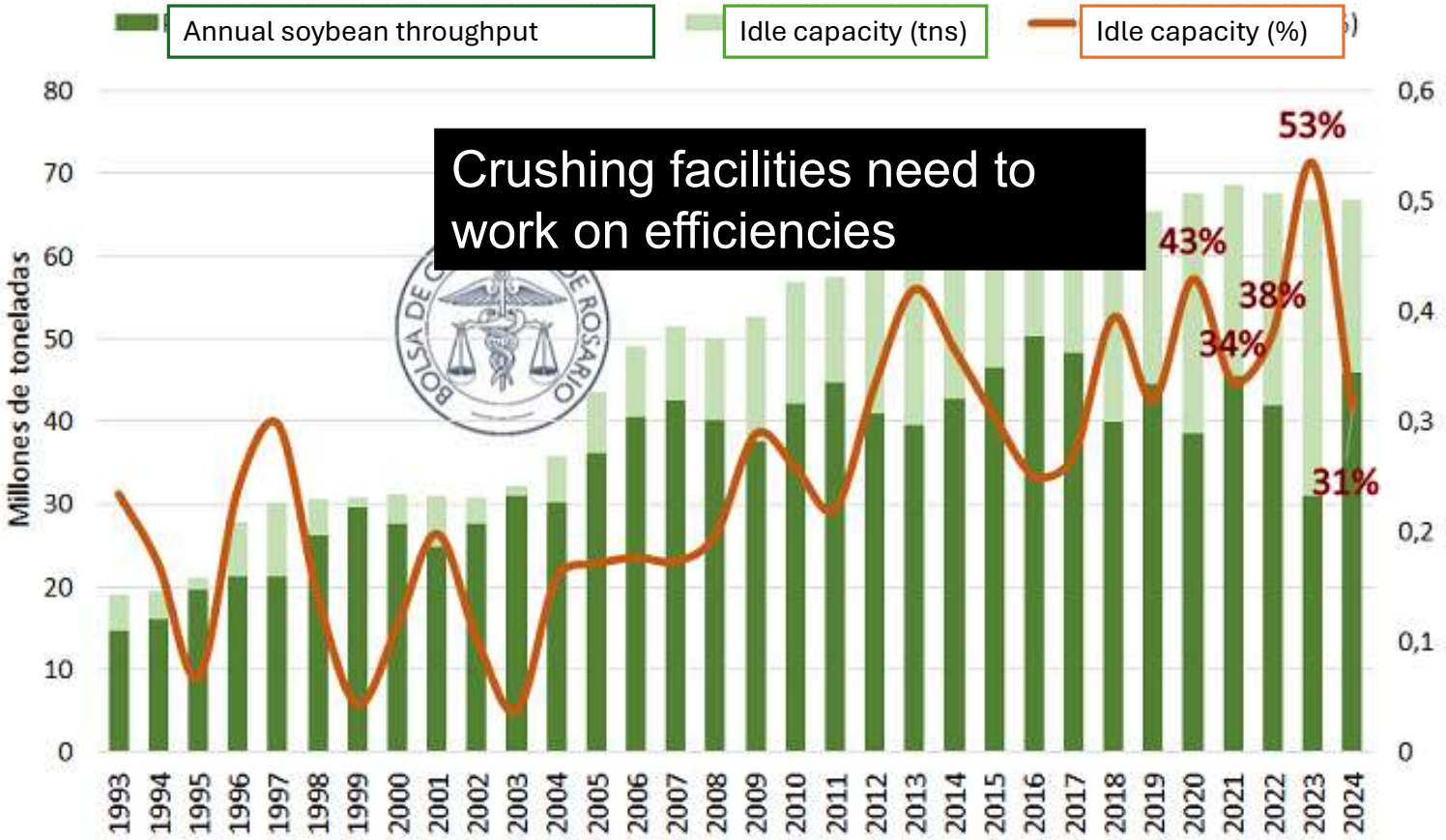
ING CAPACITY - SOYBEAN ARGENTINA

Provincia	apacidad Crushing dia) 2025
Buenos Aires	3.000
	2.000
	1.800
	150
	100
	380
	2.000
	500
	3.800
	2.200
	1.350
	1.200
	600
	300
	300
	50
Capital Federal	700
	75
Córdoba	1.000
	350
	250
	17.000
	270
	200
	500
	130

Provincia	Tipo de planta	Empresa	Ciudad	Capacidad de Crushing (t/dia) 2024	Capacidad de Crushing (t/dia) 2025
Santiago del Estero	Extracción por solvente	Viluco	Frías	3.000	3.000
Santa Fe	Extracción por solvente	Molinos Agro	San Lorenzo	20.000	20.000
		Molinos Rio de la Plata	Rosario	1.200	1.200
ROSARIO CLUSTER		LDC	Gral. Lagos	12.000	12.000
		LDC	Timbúes	8.000	8.000
		COFCO	Timbúes	8.000	8.000
		Terminal 6	Pto. San Martín	20.000	20.000
		Oleaginosas San Lorenzo	Pto. San Lorenzo	10.000	10.000
		Vicentín	Pto. San Lorenzo	6.500	6.500
		Cargill	Quebracho	6.000	6.000
		Cargill	Villa Gob. Galvez	13.000	13.000
		Bunge	Pto.San Martín	8.000	8.000
		Bunge	San Jerónimo Sud	1.350	1.350
		Aceitera Chabás	Chabás	4.000	4.000
		Buyatti	Pto. San Martín	3.000	3.000
		AFA	Los Cardos	450	450
		Tanoni Hnos	Bombal	500	500
		Ricedal Alimentos	Chabás	300	300
		Renova	Timbúes	33.000	33.000
So					4.000
					5.500
					1.456
So					200
					100
					157
Capacidad teórica de					12.418
Capacidad teórica de					97.940

58 CRUSHING PLANTS
212,000 tn DAY
70 Millons tn YEAR

EVOLUTION CRUSHING THEORICAL CAPACITY VERSUS SOYBEANS PRODUCTION



OILSEEDS PRODUCTION AND CRUSHING AT INDIA

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ - WasteZero™ - FlowStable™ - Kaizen Action™ - StratBridge™

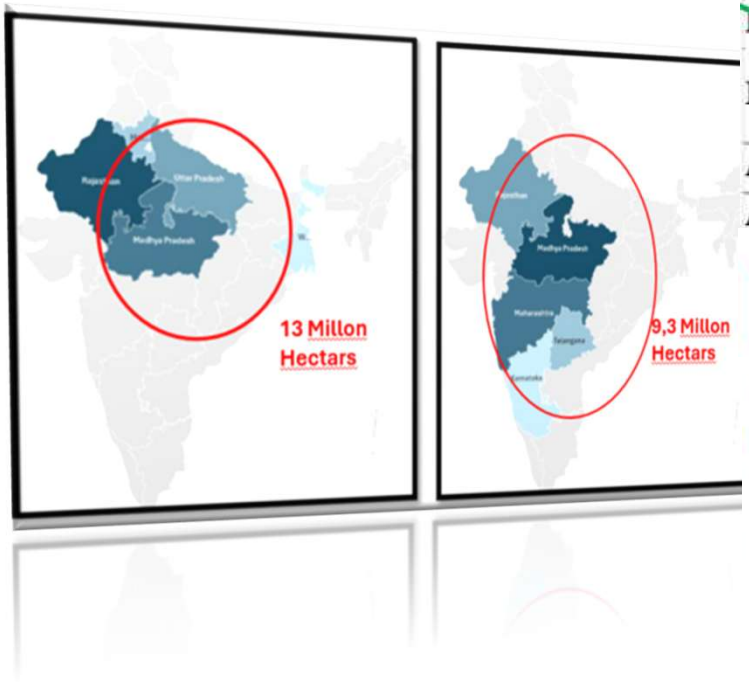


Table 6: Oilseed, Soybean, Production, Supply and Distribution

Oilseed, Soybean	2023/2024		2024/2025		2025/2026	
Market Year Begins	Oct 2023		Oct 2024		Oct 2025	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Planted (1000 HA)	13300	13300	13600	13600	0	13200
Area Harvested (1000 HA)	13200	13150	13500	13500	0	13040
Crush (1000 MT)	11300	11600	11000	10542	0	10125

Table 5: Oilseed, Rapeseed, Production, Supply and Distribution

Oilseed, Rapeseed	2023/2024		2024/2025		2025/2026	
Market Year Begins	Oct 2023		Oct 2024		Oct 2025	
India	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Planted (1000 HA)	9250	9250	9300	8950	0	9300
Area Harvested (1000 HA)	9250	9250	8900	8900	0	9250
Crush (1000 MT)	10450	10450	10400	10500	0	10970

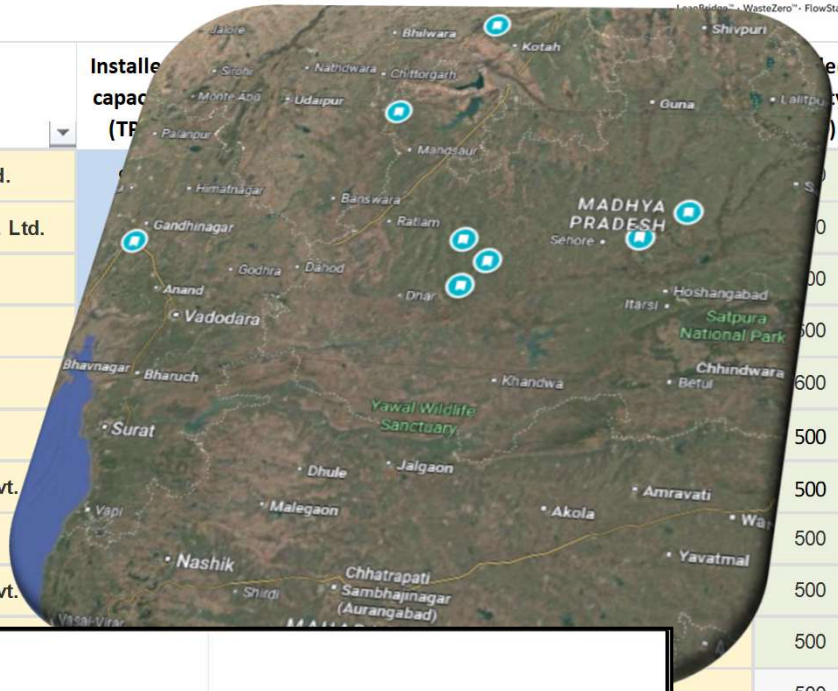
Crushing capacity at INDIA

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS

Crushing facilities need to work on efficiencies

Empr		
K.S. Oils Ltd.		
Laxmi Solvex (A unit of Laxmi Ventures (I) Ltd.)	1800	High
Gokul Refoils & Solvent Ltd.	1500	High
Gujar Agro Farms Pvt. Ltd.	1500	High
AVI Agri Business Pvt. Ltd.	1400	Medium
Vippy Industries Ltd.	1375	Medium
Kriti Nutrients Ltd.	1200	Medium
M.P. State Coop.Oilseed Growers Federation Ltd.	1200	Medium
Prestige Agro-Tech Ltd.	1200	Medium

Empresa	Installe capac (TP	ed ty)	Category
reen Energy Pvt. Ltd.			Small
ADM Agro Industries India Pvt. Ltd.		0	Small
Bhaskar Biofuels Pvt. Ltd.		00	Small
Krishna Oil Extractions Ltd.		500	Small
Sam Industries Ltd.		600	Small
Tinna Oils & Chemicals Ltd.		500	Small
Maharashtra Oil Extractions Pvt.		500	Small
Sneha Foods and Feeds Ltd.		500	Small
Bansal Extraction & Exports Pvt.		500	Small
		500	Small
		500	Non in operation
		500	Non in operation
		500	Non in operation
Ltd.		500	Non in operation
		500	Non in operation
		500	Non in operation
		500	Non in operation



MULTISEED PLANTS in INDIA

	Installed capacity (TPD)	Equivalent capacity (days)	% ASSET UTILIZATION	Number of plants
Soybean	69000	146	42%	140
Rapeseed	58650	186	53%	90
Cotton	48300	168	48%	46

ARGENTINA & INDIA

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ - WasteZero™ - FlowStable™ - Kaizen Action™ - StratBridge™

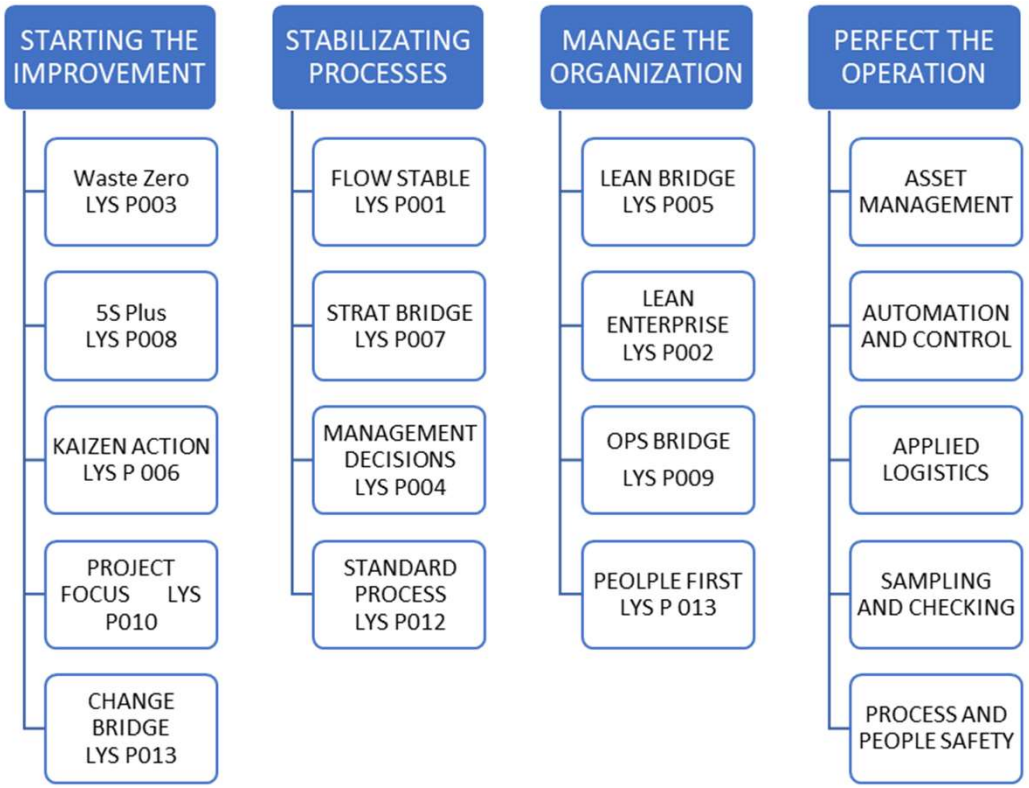
LACK OF OILSEED PRODUCTION COMPARED WITH INSTALLED CAPACITY

We all need to work on Efficiencies because is the only raw material that never runs out

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

"There`s no Plug and Play solution.

Everything has to be adapted to the necessities of the client"



LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

TECHNICAL AND BUSSINES CHALLENGES FOR ARGENTINA AND INDIA

Waste and OverCost:

- Storage conditions
- Overdrying
- Losses in meal quality (oil content, protein), Oil losses (yield and quality)
- Negative mass balance (Dry Base Shrink)

Process Variability

- Throughput Real-time monitoring
- Automation technology for better control
- SOPs (standard operational practices)
- Maintenance and reliability strategy, key actors to reduce unplanned stoppages.

LEAN + 6 Sigma

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

PART I . WASTE REDUCTION

Defects
Efforts caused by rework, scrap and incorrect information

Overproduction
Production that is more than needed or before it is needed

Waiting
Wasted time waiting for the next step in a process

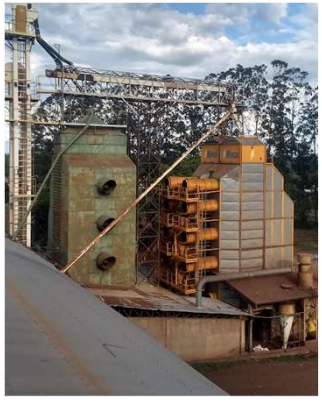
Non-Utilized Talent
Underutilzing people's talents, skills & knowledge.

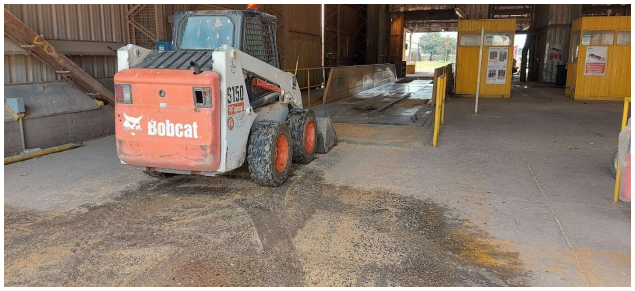
Transportation
Unnecessary movements of products & materials.

Inventory
Excess products and materials not being processed.

Motion
Unnecessary movements by people (ex.walking).

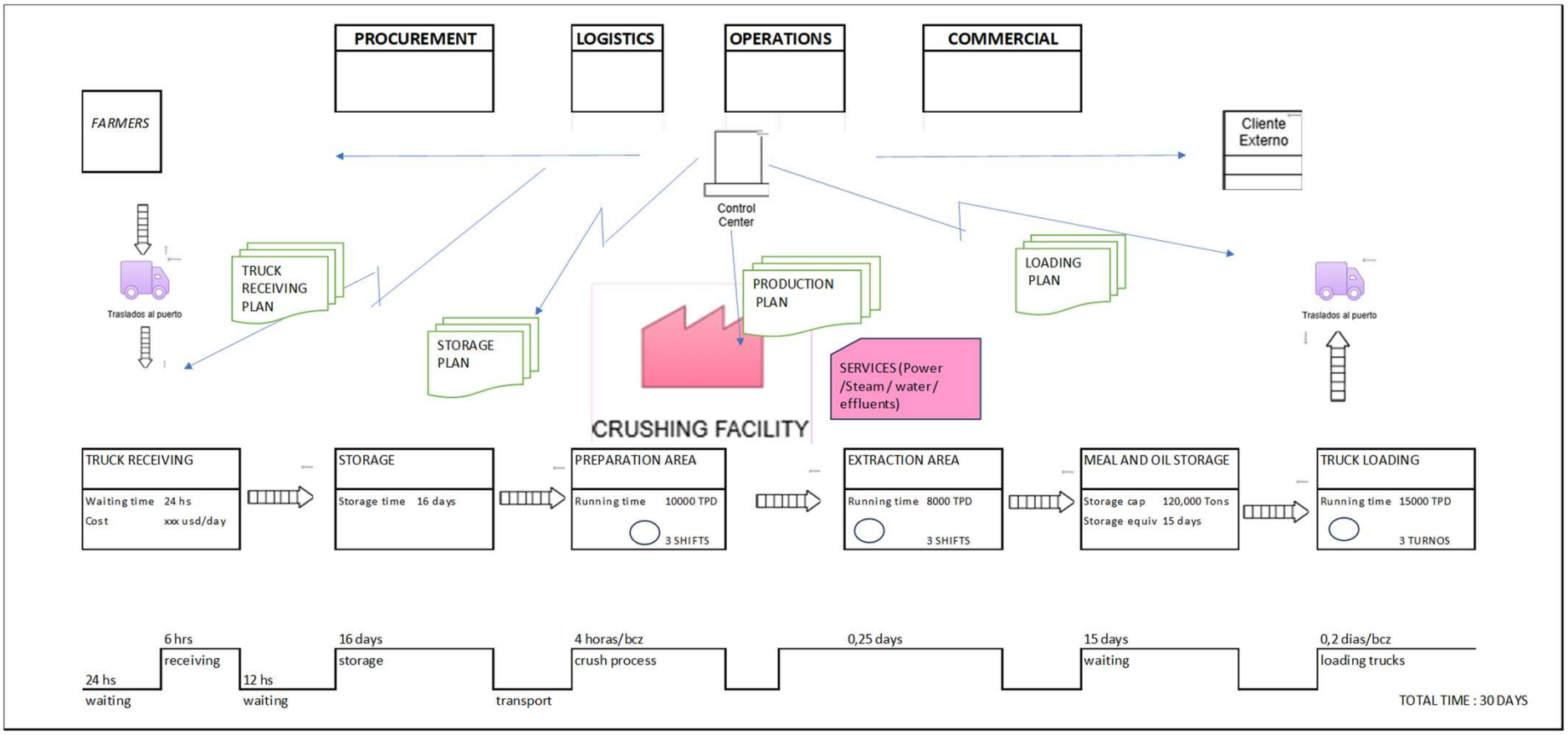
Extra-Processing
More work or higher quality than is required, by the customer.





CRUSHING BUSINESS - VALUE STREAM MAP

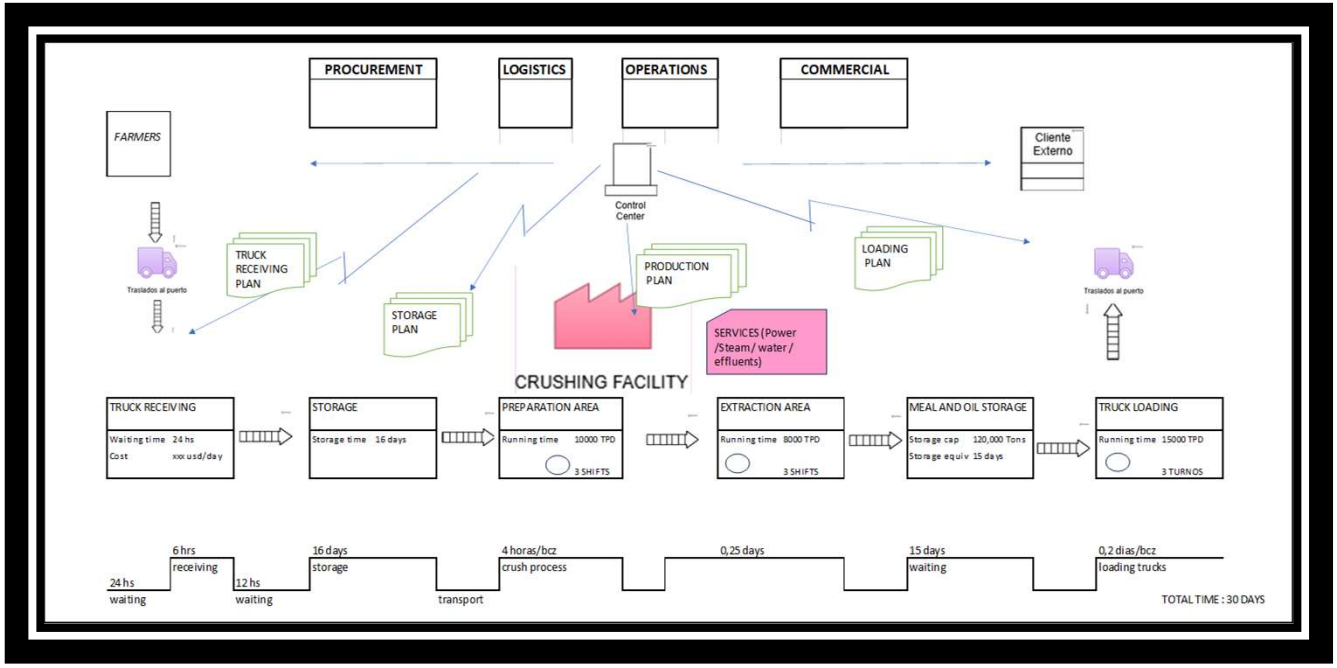
LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™



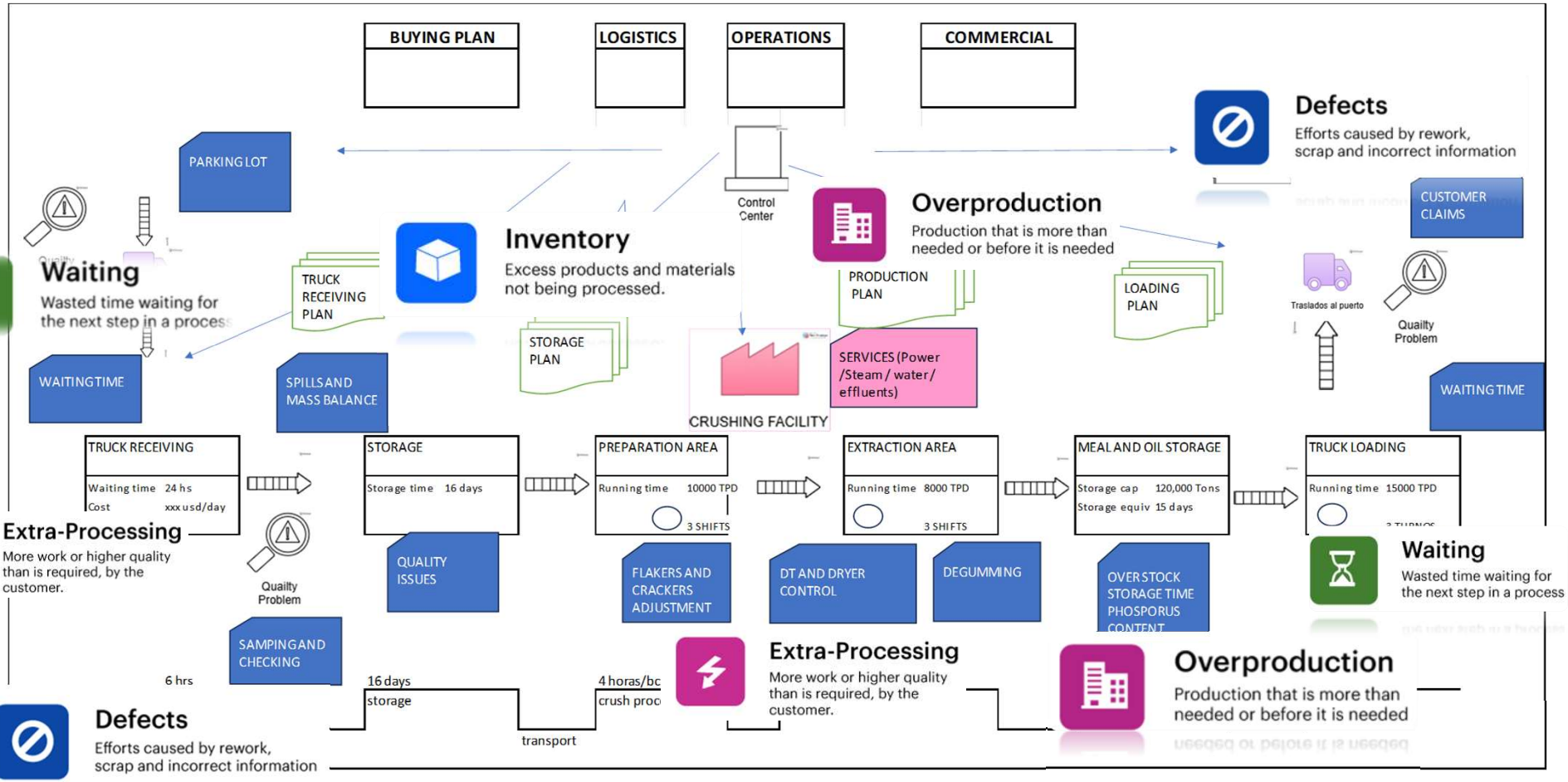
VALUE STREAM MAP - GEMBA WALK

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

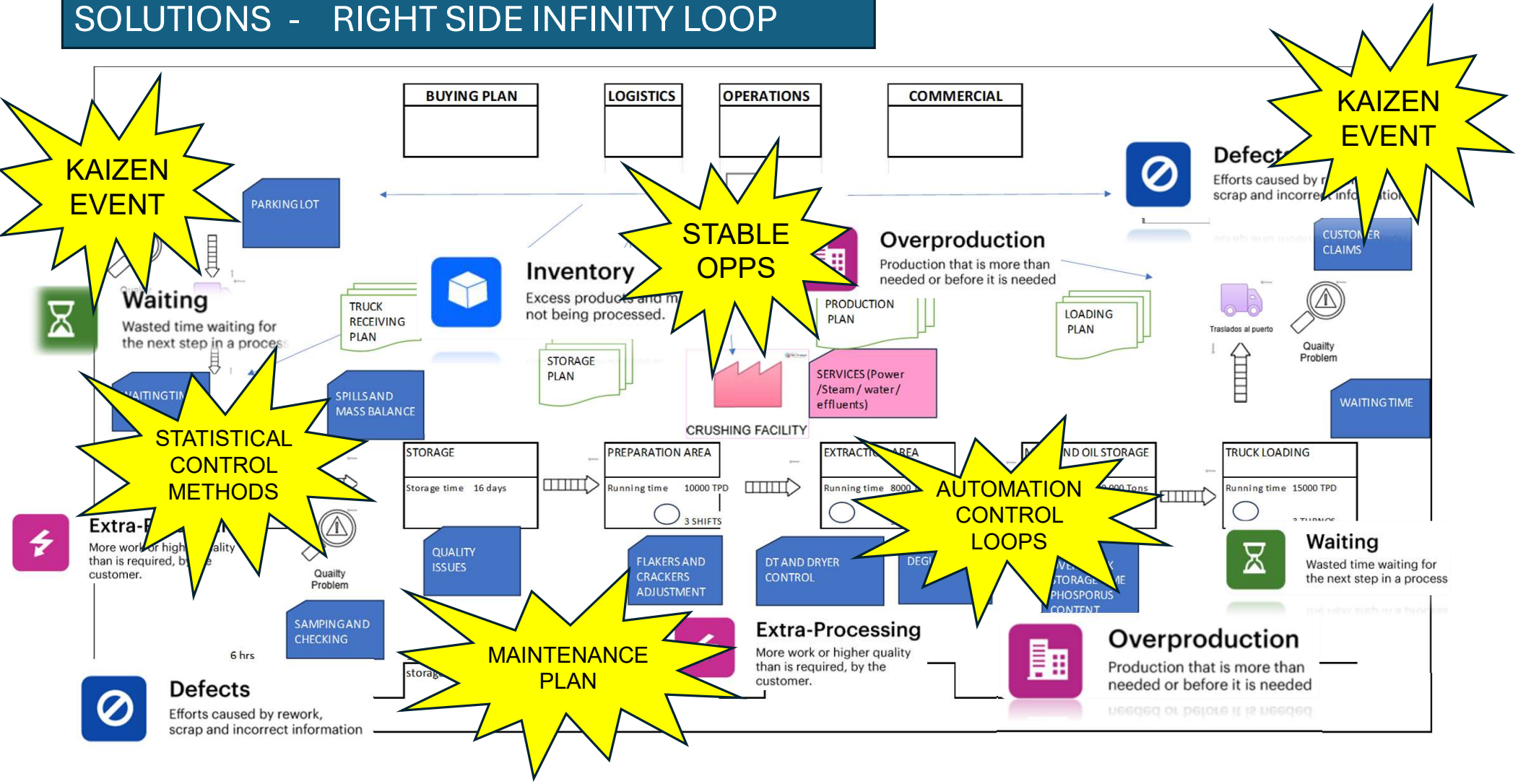
A Gemba Walk is a structured visit to the workplace, where leaders go to the "real place" of value creation to observe processes, engage with employees, and identify opportunities for improvement.



VALUE STREAM MAP - GEMBA WALK



SOLUTIONS - RIGHT SIDE INFINITY LOOP



Defects
Efforts caused by rework, scrap and incorrect information

Overproduction
Production that is more than needed or before it is needed

Transportation
Unnecessary movements of products & materials.

Inventory
Excess products and materials not being processed.

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

Waiting
Wasted time waiting for the next step in a process

Non-Utilized Talent
Underutilzing people's talents, skills & knowledge.

Motion
Unnecessary movements by people (ex.walking).

Extra-Processing
More work or higher quality than is required, by the customer.

Description	Waste found	Business Area	Variable analyzed	Cost reduction	Additional income	Next steps
Soybean moisture above spec	Overprocessing	Drying at source	Moisture and impurities	X		Control plan for drying and loading
		Plant receiving area	waiting time	X		
Sampling and checking	Production problem	Receiving and Admin	Quality checks	X	X	
warehousing	Over stock	Storage	Working capital	X	X	Inventory management Process Safety Procedures
Crackers rolls				X	X	Kaizen event with Maintenance team
Dehulling system			ure	X	X	Kaizen event with Maintenance team
Flakers			;	x	x	Operations team trainning
Throughput	Volume not stable	Plant	commercial plan		X	Stable operations
Meal drying system	overdryng	Extraction	Meal moisture	X	X	Stable operations

1000 tpd Factory
1 % moisture dif. =
100.000 usd month

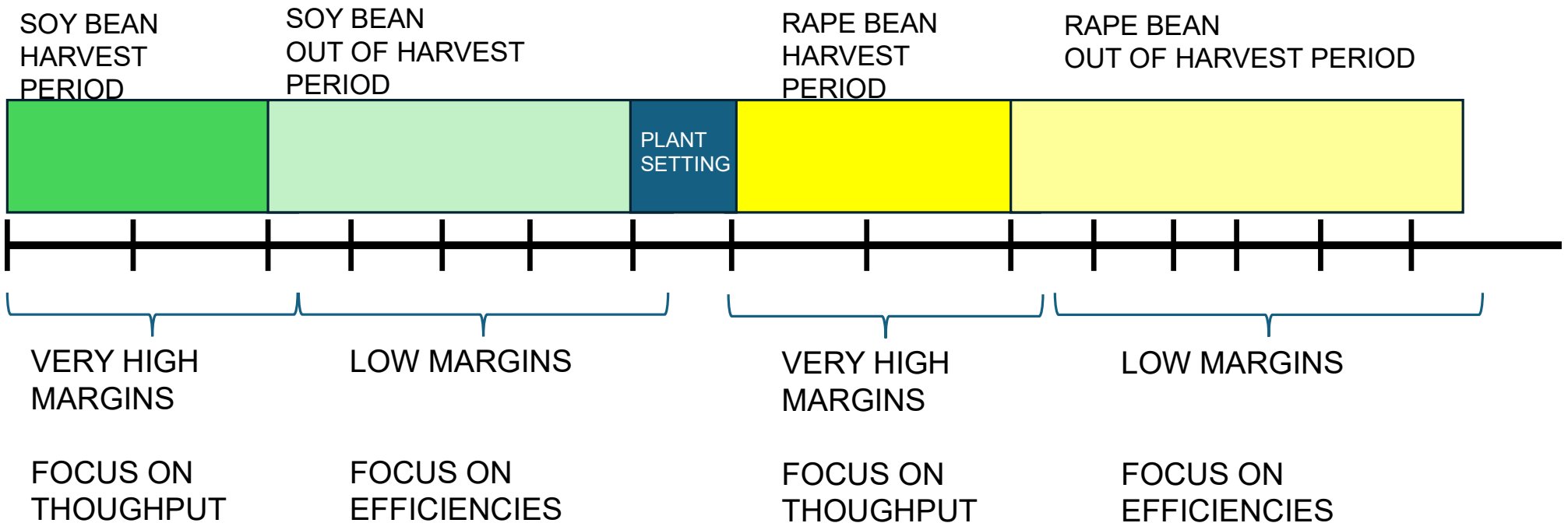
90.000 Ton YEAR Factory
0,05 % Mass Balance dif.
= 1.500.000 usd year

1000 tpd Factory
0,05 % Oil extraction dif. Becasue of cracking and flaking
= 80.000 usd month

PART II . PROCESS VARIATION

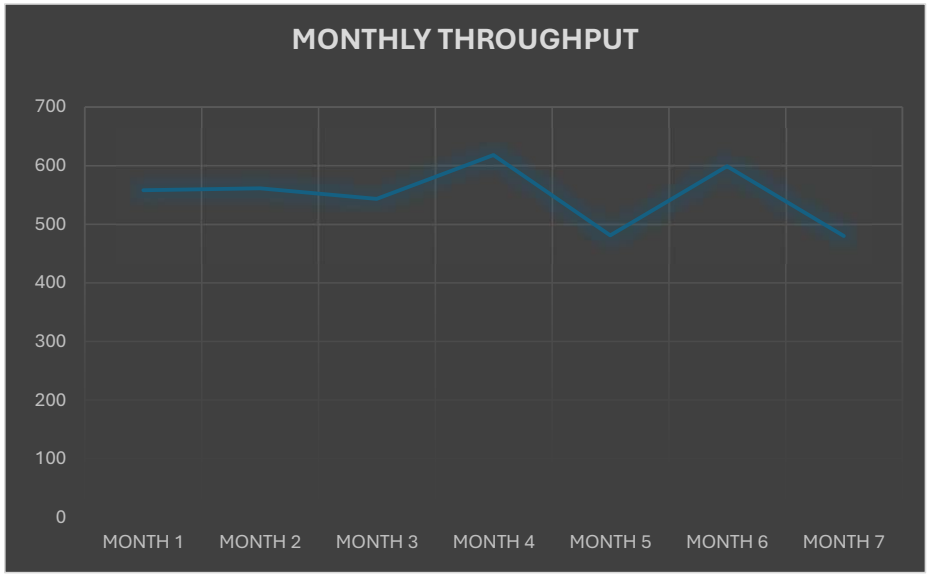
LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

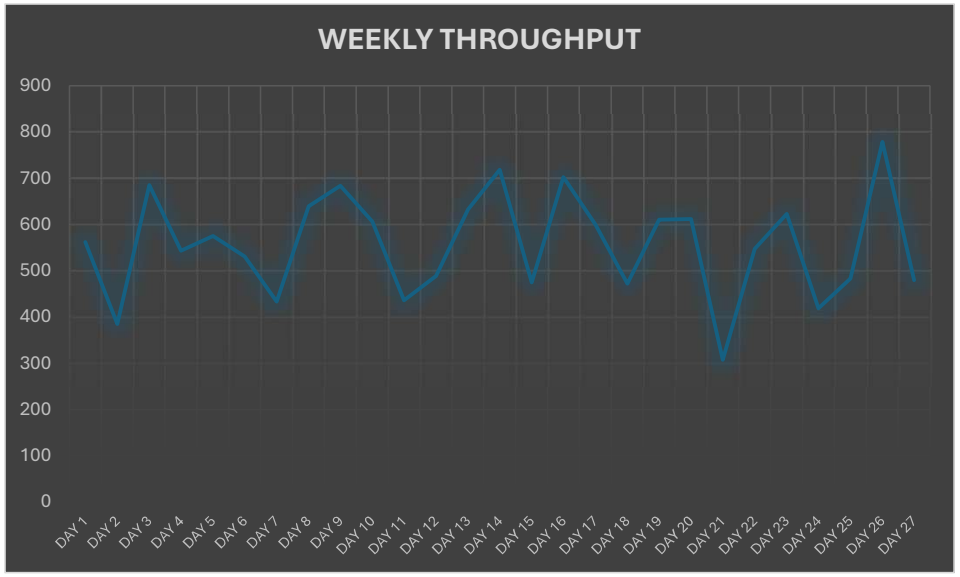
CRUSHING CALENDAR (Regardless country or región)



TO IMPROVE STABILITY IS THE GOAL

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

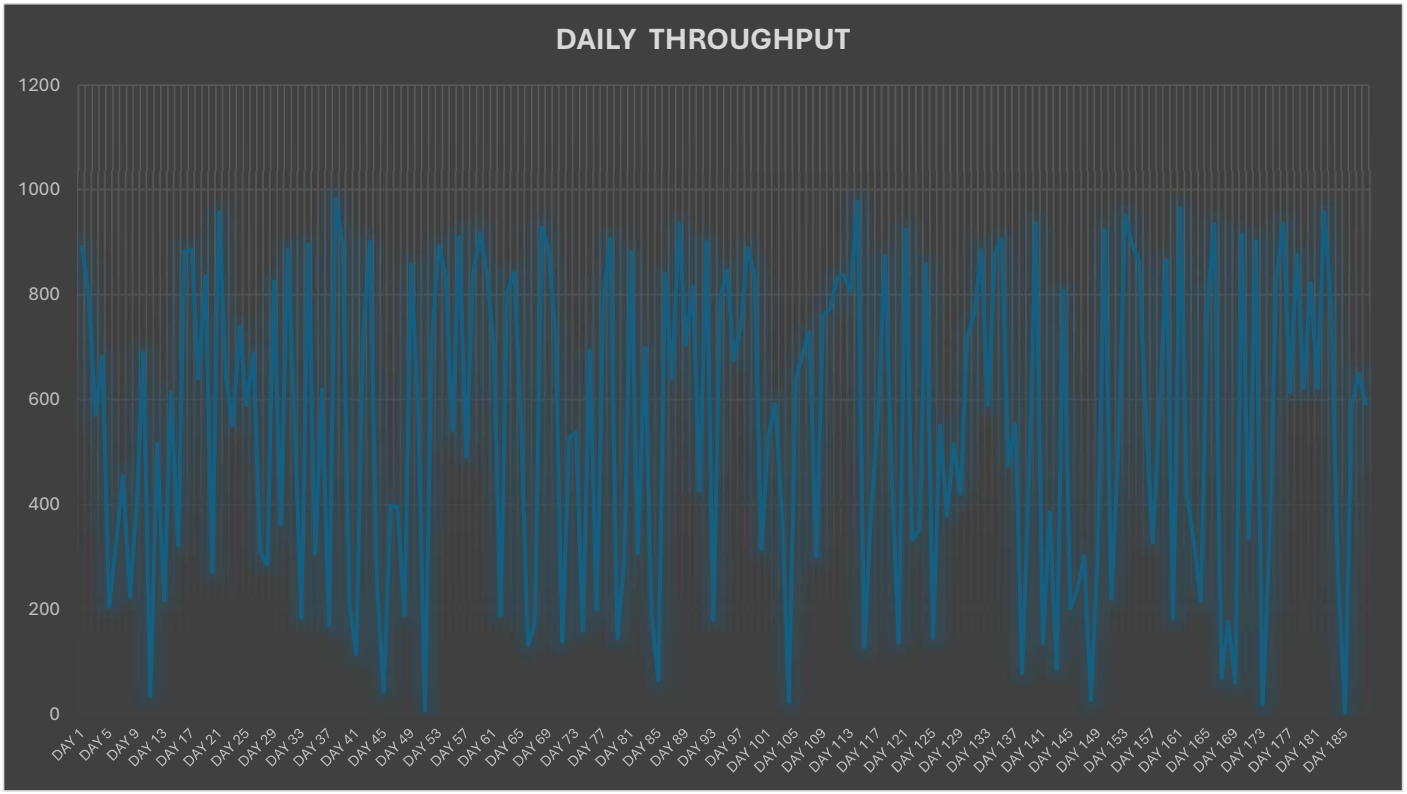




PLANT MANAGER VIEW

PLANT SUPERVISOR VIEW

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™



PLANT OPERATORS REALITY

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

THROUGHPUT in real time

PLANT RUNNING ABOVE NORMAL RATE

600

400

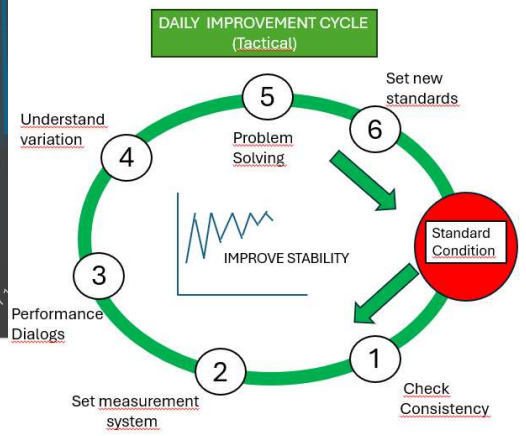
SLOWDOWNS

200

PLANT DOWN

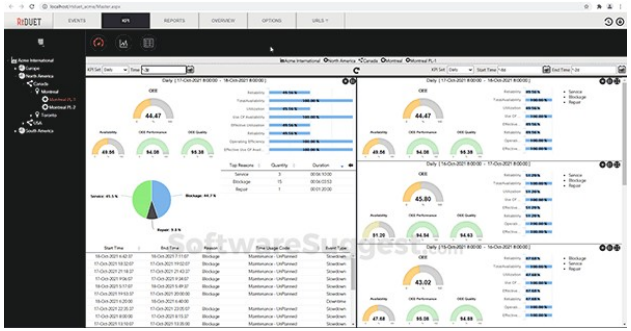
0

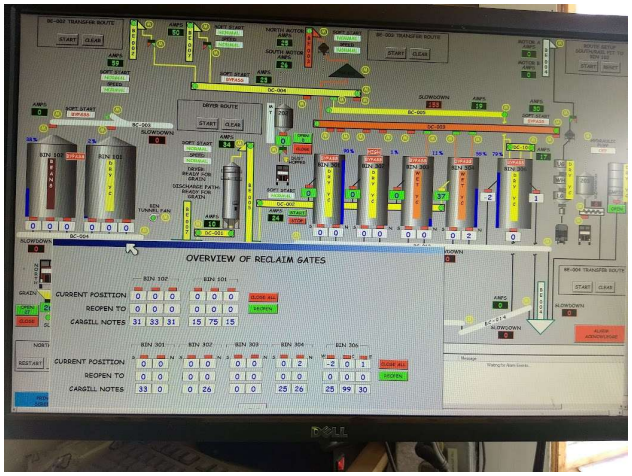
DAY 1 DAY 5 DAY 9 DAY 13 DAY 17 DAY 21 DAY 25 DAY 29 DAY 33 DAY 37 DAY 41 DAY 45 DAY 49 DAY 53 DAY 57 DAY 61 DAY 65 DAY 69 DAY 73 DAY 77 DAY 81 DAY 85 DAY 89 DAY 93 DAY 97 DAY 101 DAY 105 DAY 109 DAY 113 DAY 117 DAY 121 DAY 125 DAY 129 DAY 133 DAY 137 DAY 141 DAY 145 DAY 149



LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS

LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™



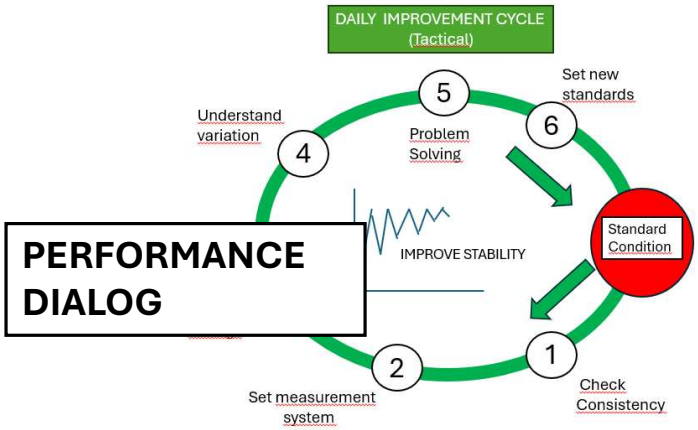


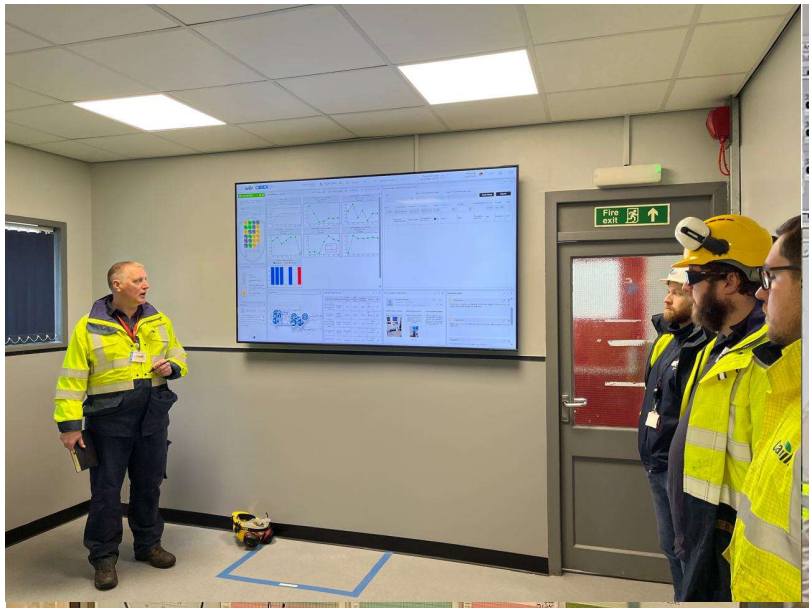
REDARLESS THE TECHNOLOGY , THE PLANT NEED TO READ THE MAIN VARIABLES IN REAL TIME (OR CLOSE TO REAL)

DAILY CONTACT
lead by Operators

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

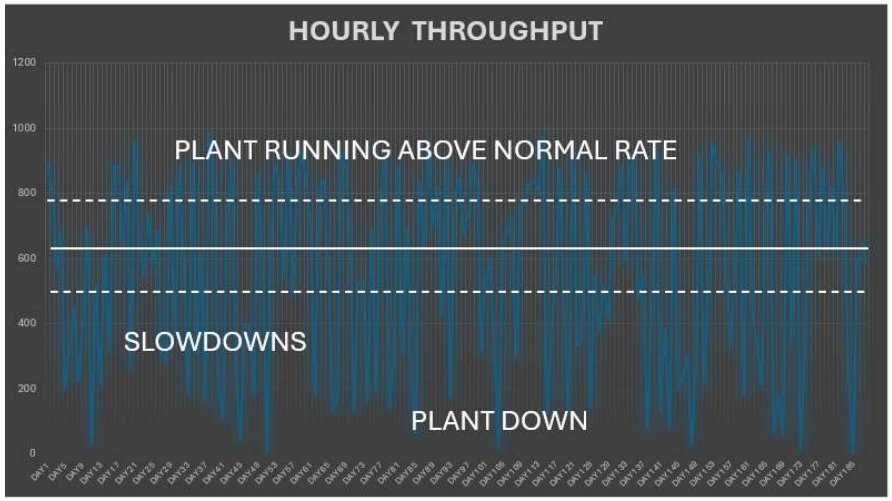
Empowerment - Inverted Pyramid





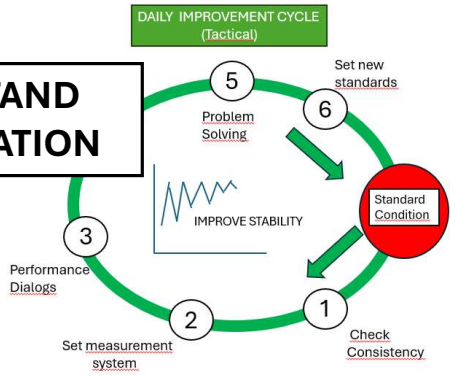
LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS

LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

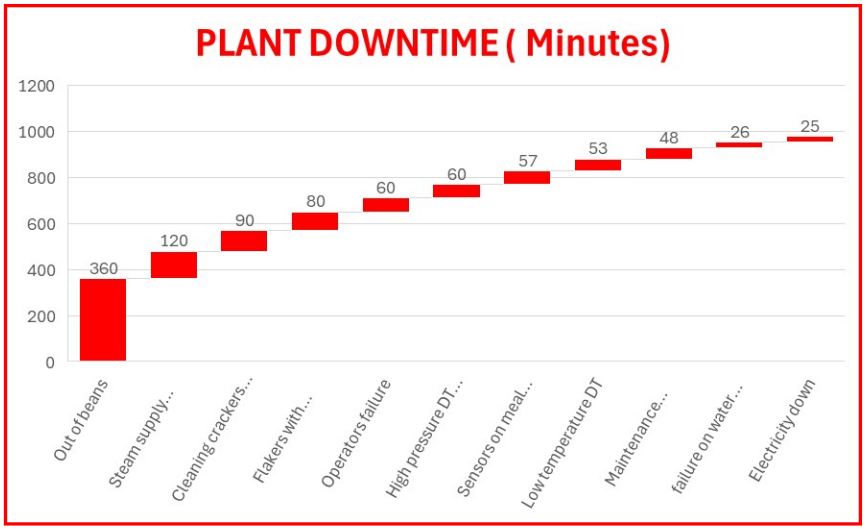


LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

UNDERSTAND THE VARIATION

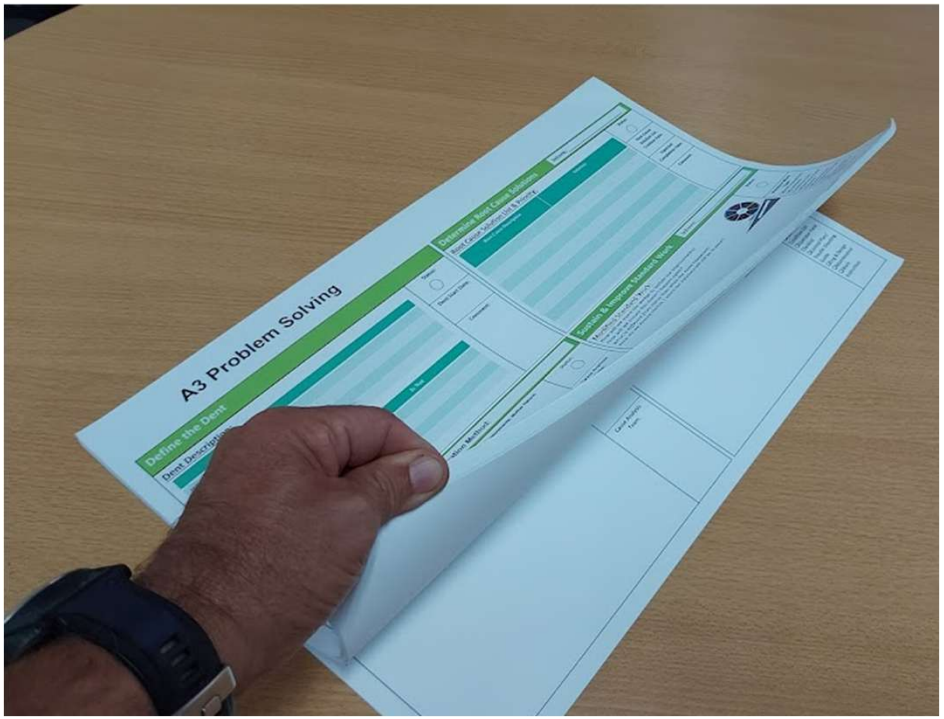


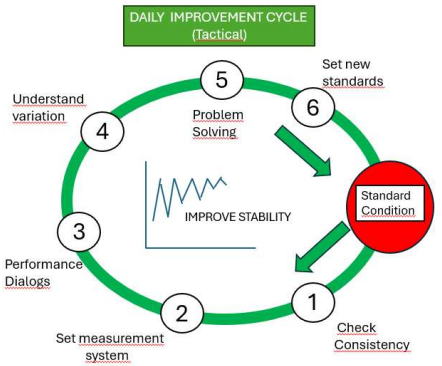
	Minutes
Out of beans	360
Steam supply problems	120
Cleaning crackers magnets	90
Flakers with problems on rolls	80
Operators failure	60
High pressure DT dome	60
Sensors on meal conveyor	57
Low temperature DT	53
Maintenance schedulle downtime	48
failure on water pumps	26
Electricity down	25



WEEKLY TROUBLESHOOTING SESSIONS

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™



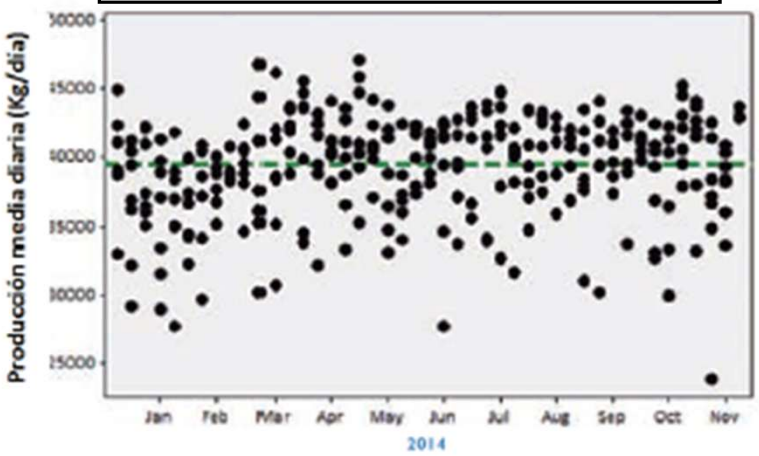


Benefits

✓ **No CAPEX Required**

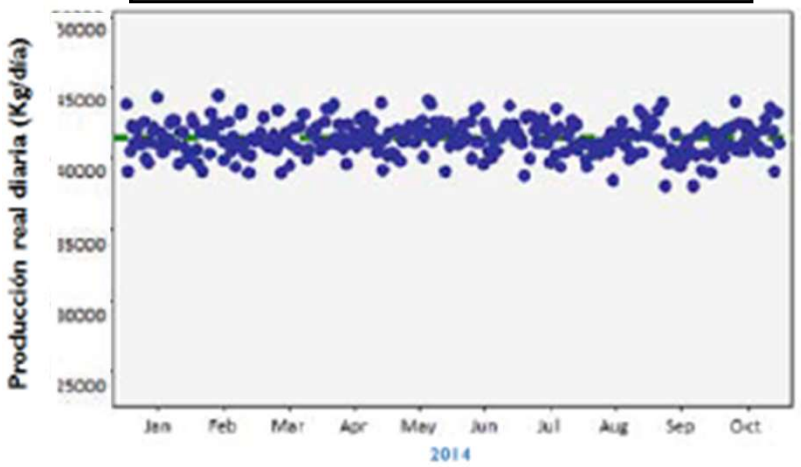
LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

Daily production



BEFORE

New Daily production



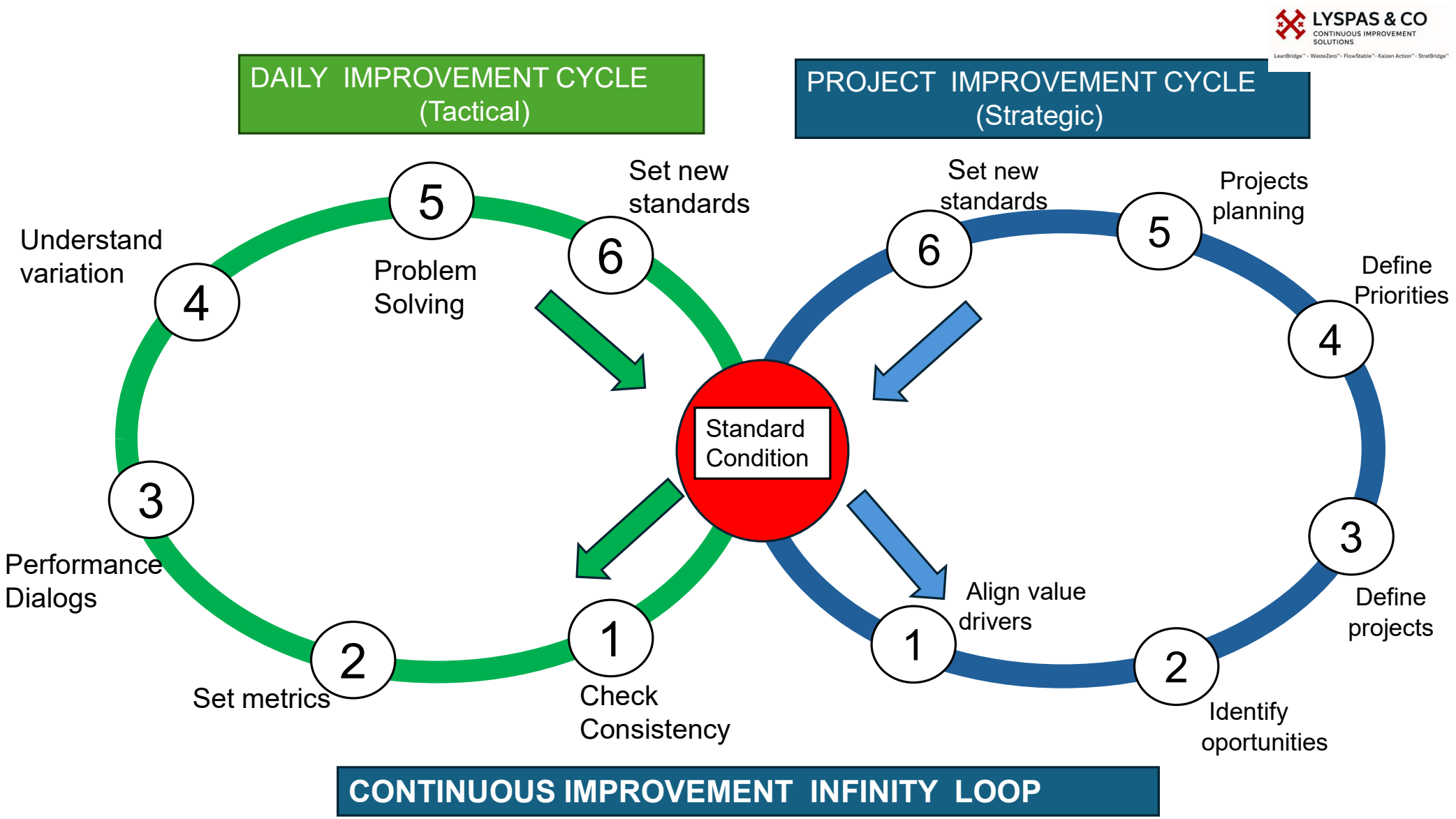
AFTER

✓ STABILITY = more VOLUME in same period of time

✓ STABILITY = COST REDUCTION & PEOPLE ENGAMENT

15%
COST REDUCTION

25%
PRODUCTIVITY IMPROVEMENT


LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ - WasteZero™ - FlowStable™ - Kaizen Action™ - StratBridge™
DAILY IMPROVEMENT CYCLE
(Tactical)
PROJECT IMPROVEMENT CYCLE
(Strategic)
5
Problem Solving
6
Set new standards
4
Understand variation
3
Performance Dialogs
2
Set metrics
1
Check Consistency
Standard Condition
6
Set new standards
5
Projects planning
4
Define Priorities
3
Define projects
2
Identify oportunities
1
Align value drivers
CONTINUOUS IMPROVEMENT INFINITY LOOP

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

TECHNICAL AND BUSSINES CHALLENGES FOR ARGENTINA AND INDIA

Raw Material Issues:

CRITICAL FOR COMMERCIAL OPPORTUNITIES, BEANS CONSERVATION AND PLANT YIELDS

Process Variability:

CRITICAL FOR STABLE OPERATIONS AND SLIMSTREAM EFFECTS

Downtime:

CRITICAL TO ENSURE RELIABLE SUPPLY TO CUSTOMERS

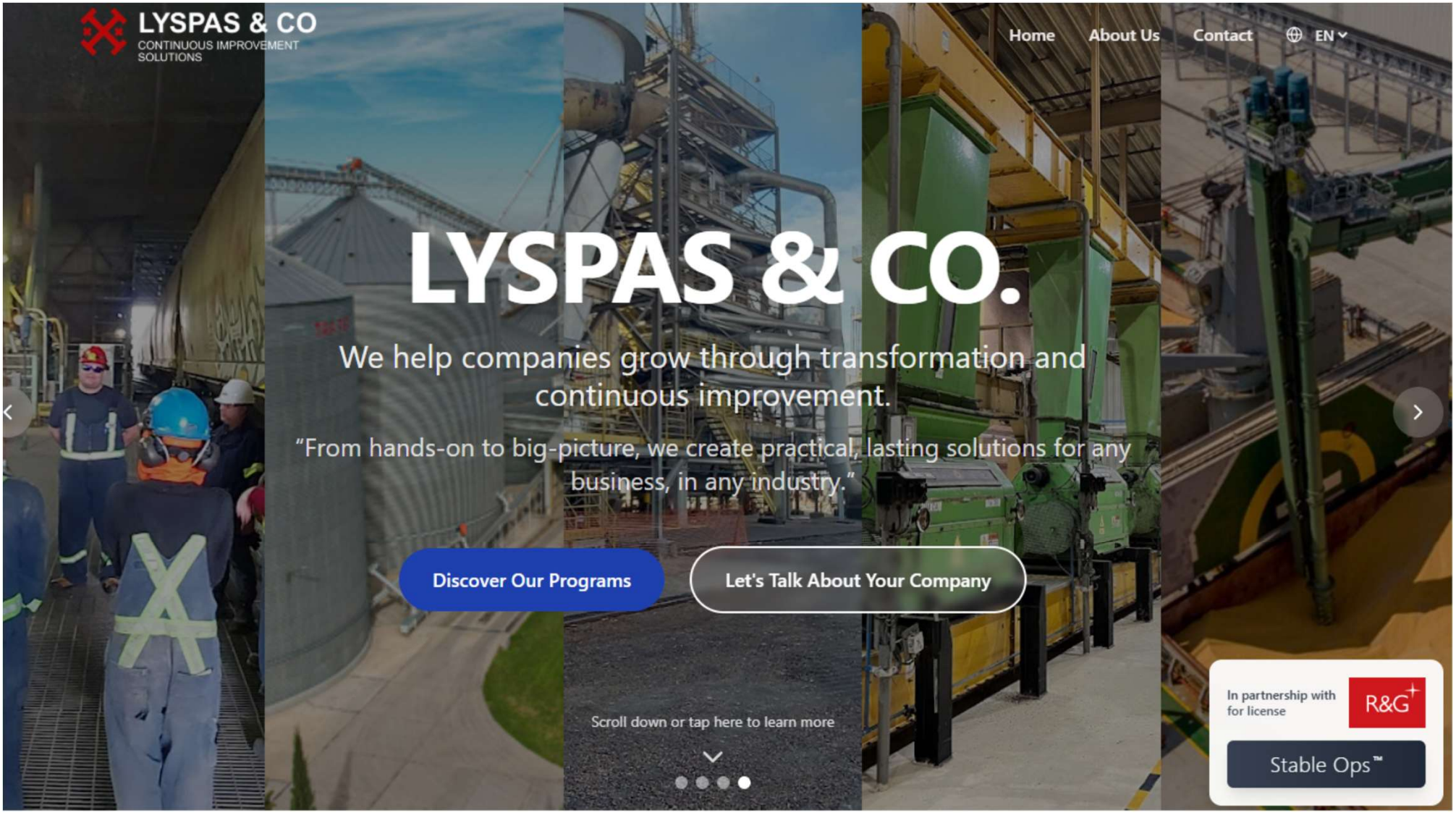
Waste and OverCost:

CRITICAL FOR PLANT ADJUSTMENTS AND "JUST DO IT" PROJECTS

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

LET`S START WITH THE MOST SIMPLE TOOLS … BUT LETS START AS SOON AS POSSIBLE

STARTING THE IMPROVEMENT	STABILIZATING PROCESSES	MANAGE THE ORGANIZATION	PERFECT THE OPERATION
Waste Zero LYS P003	FLOW STABLE LYS P001	LEAN BRIDGE LYS P005	ASSET MANAGEMENT
5S Plus LYS P008	STRAT BRIDGE LYS P007	LEAN ENTERPRISE LYS P002	AUTOMATION AND CONTROL
KAIZEN ACTION LYS P 006	MANAGEMENT DECISIONS LYS P004	OPS BRIDGE LYS P009	APPLIED LOGISTICS
PROJECT FOCUS LYS P010	STANDARD PROCESS LYS P012	PEOLPLE FIRST LYS P 013	SAMPLING AND CHECKING
CHANGE BRIDGE LYS P013			PROCESS AND PEOPLE SAFETY


LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
Home
About Us
Contact
EN
LYSPAS & CO.
We help companies grow through transformation and continuous improvement.
"From hands-on to big-picture, we create practical, lasting solutions for any business, in any industry."
Discover Our Programs
Let's Talk About Your Company
Scroll down or tap here to learn more
In partnership with for license
R&G+
Stable Ops™

NAMASTÈ

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS

LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™

Q&A Session

LYSPAS & CO
CONTINUOUS IMPROVEMENT SOLUTIONS
LeanBridge™ · WasteZero™ · FlowStable™ · Kaizen Action™ · StratBridge™