

COMMITTED CULTURE

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Safety, Health & Environmental



WHAT IS COMMITTED CULTURE*?

WHAT DOES IT MEAN IN 20/20?

All employees and contractors commit to 'do it right' and have a plan for when it goes wrong.

- Executives **personally and visibly** lead process safety.
- Operators and mechanics **diligently follow procedures and speak up** when they suspect a problem or see an opportunity for improvement.
- Supervisors and managers **verify work is done properly, intervene to correct** situations and **openly communicate** negative news to management.

* Defined by AIChE / CCPS: <https://www.aiche.org/ccps/resources/vision-2020>

IT STARTS WITH LEADERSHIP



Doug Baker
Chairman and CEO, Ecolab

Alex Blanco
EVP & Chief Supply Chain Officer, Ecolab



ABOUT ECOLAB

- ▶ **49,000 employees in 170 countries with 3 million customer locations**
- ▶ **We help customers reduce cost and environmental impact**
- ▶ **In 2018: Helped customers save 188 billion gallons of water**

ECOLAB



PROVIDING + PROTECTING WHAT'S VITAL



Clean Water



Safe Food



Abundant Energy



Healthy Environments

EVERY YEAR, ECOLAB HELPS:

Clean
34 billion
hands



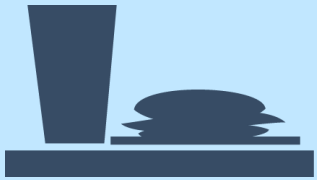
Fuel
550
MILLION cars

Make

25%



of the world's
processed food
safe



Serve
45 BILLION
safe meals



Produce **42%**
of the global
processed
milk supply



Manage
1.1 TRILLION
gallons of water



Generate
22%
of the world's
power

Meet **45%**
of the global demand
for petroleum
products



Manage
1 TRILLION+
gallons of
water



Clean
1 BILLION+
hotel rooms

OUR GLOBAL SUPPLY CHAIN



- ▲ 120+ plants, 36+ dilution centers
- ▲ More than 290 warehouses
- ▲ 1,250+ vehicles
- ▲ 13,000+ employees

PROCESS SAFETY PROGRAM MAPS TO ECOLAB NEEDS



FTSE4Good



- Profitable
- Ethical, Honest
- Customer Focused
- Complex
- Growth Modes
 - Via acquisition
 - Organic
- Turnover
- Cost Conscious
- Tight on resources
- Risk Based Decisions

ECOLAB – WHERE DID OUR JOURNEY START?



KEY FACTORS TO DELIVER SUCCESS

Committed leadership

Articulate the business value

Competent people

Deliver some 'immediate' success

THE VALUE OF PROCESS SAFETY

TANGIBLE

Can show in another budget

Examples

- Insurance Premiums
- Workers Comp (or equivalent)
- Lost work days
- Fines
- Material losses
- Consultants
- Paying for “Once in a lifetime event”
- Impact on Utility costs

INTANGIBLE

Avoided Costs

- Injured people
- Damaged Equipment
- Environmental
- Metrics Progress

Damage to Brand

- Monetary loss
- Customer Impact
- Loss of Business
- Public Brand impact

AWARENESS, BOUNDARY CONDITIONS



AWARENESS

Initiating incident with business impact



BOUNDARY CONDITIONS

Set by who the company is:

- Quick tactical data analysis
- Strategic path forward

QUICK TACTICAL DATA ANALYSIS

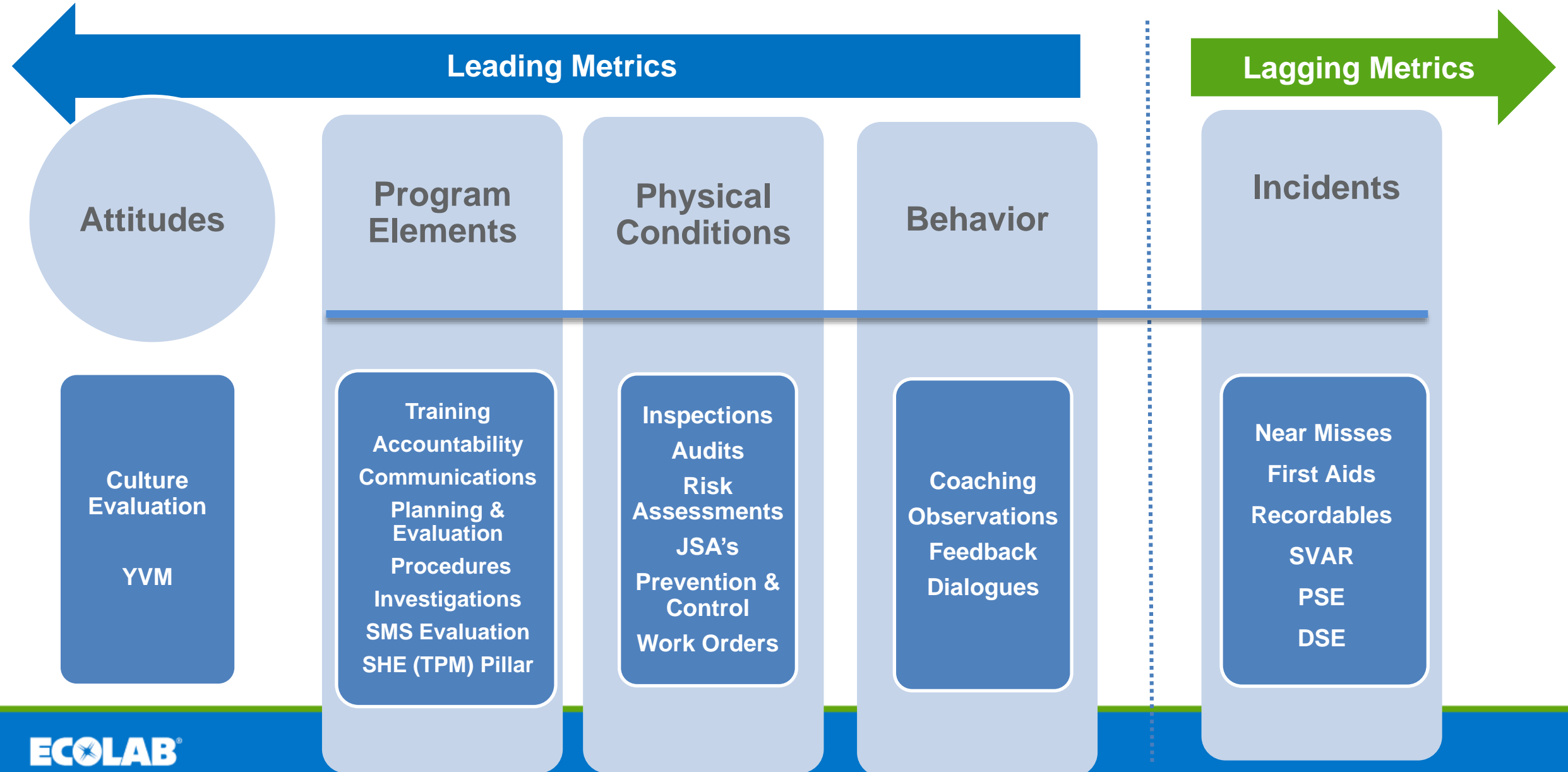
- Chemistry
- Volume
- Location
- Site Performance
- Importance to Business

STRATEGIC PATH FORWARD

- Leverage Industry Best Practices
- CCPS / AIChE
- Benchmarking
- More Focused Data Analysis
- SMS / Risk Management Program

- Get **immediate results**
- Set up for **sustainable program**

SHE METRICS PORTFOLIO



PRIORITIZE

Classical Risk Matrix

- Company Matrix (not Process Safety)
- Endorsed by Legal
- Measures:
 - Injury – public
 - Injury – Ecolab
 - Environmental
 - Community / reputation impact
 - Operational / Business Interruption

Tools:

- Audits
- PHA / Hazop
- Screening Tools
- Red List
- Etc.

F8	C	B	A	A	A	A
F7	D	C	B	A	A	A
F6	D	D	C	B	A	A
F5	D	D	C	C	B	A
F4	D	D	D	C	C	B
F3	D	D	D	D	C	C
F2	D	D	D	D	D	C
F1	D	D	D	D	D	D
Ranking	C1	C2	C3	C4	C5	C6

	Acids, Strong Non-Oxidizing	Acids, Strong Oxidizing	AMMONIUM CHELANTS AND POLYMERS	Alkanolamines	Hyphochlorites and Chlorites, Other	Halogenating Agents (Iodine, Chlorine, Bromine, etc.)	Peracetic Acid/PERACIDS	Organic Peroxides and Hydroperoxides, Other	Nitrites, Other	Aldehydes and Reducing Agents
Acids, Strong Non-Oxidizing	X									
Acids, Strong Oxidizing	N	X								
AMMONIUM CHELANTS	N	N	X							
Alkanolamines	N	N	Y	X						
Hyphochlorites and Chlorites, Other	HL1	HL1	HL1	HL9	X					
Halogenating Agents (Iodine, Bromine, etc.)	HL1	HL1	HL1	HL9	N	X				
**Chlorine - see separate										
PERACETIC ACID/PERACIDS	N	N	N	N	HL1	HL1	X			
Organic Peroxides and Hydroperoxides, Other	N	N	N	N	N	N	N	X		
Nitrites, Other	HL4	HL4	HL9	HL9	HL9	HL9	HL9	HL9	X	
Aldehydes and Reducing Agents	N	N	N	N	HL9	HL9	HL9	HL9	HL9	X

TACTICAL SOLUTIONS + CONTINUOUS IMPROVEMENT

TACTICAL SOLUTIONS



Flammables



Chemical Incompatibility



Critical Equipment



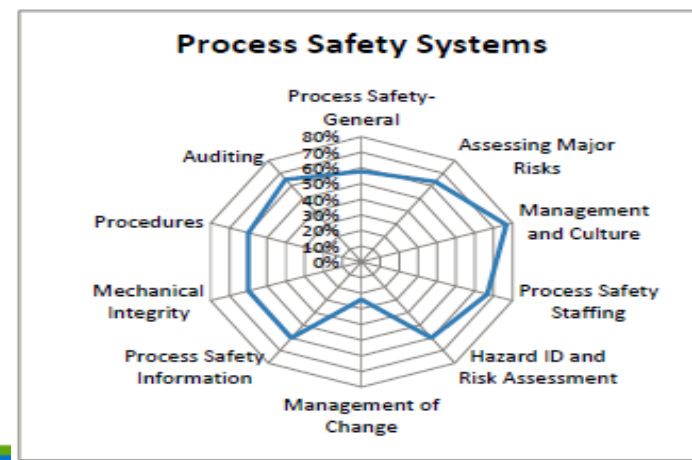
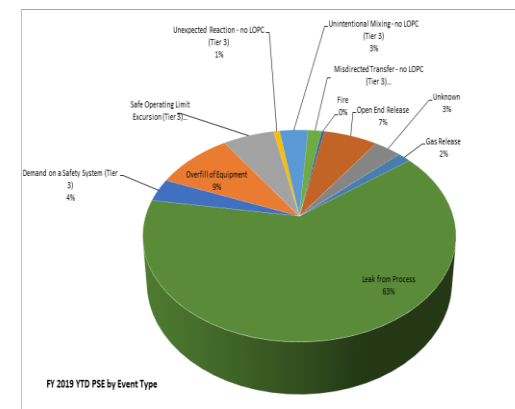
Open Ends



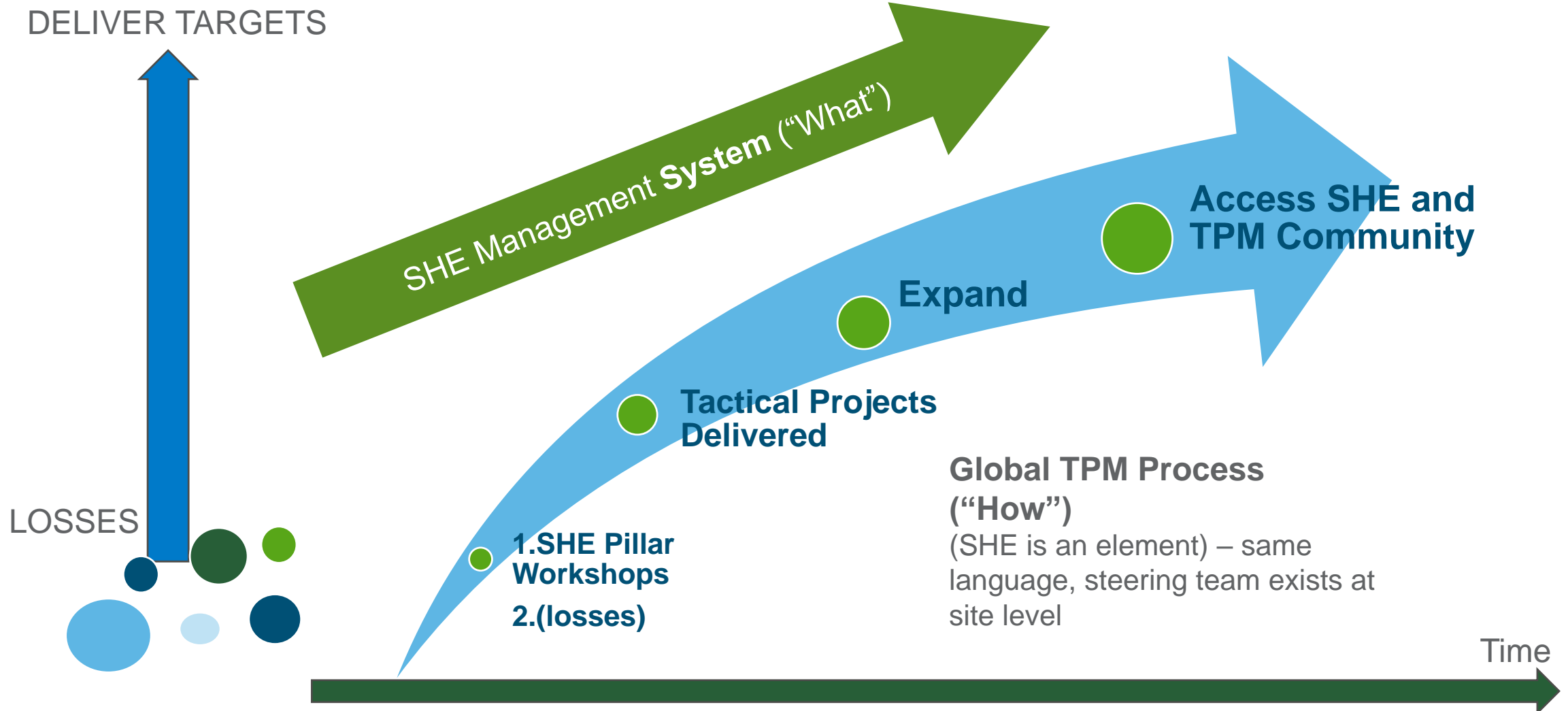
Training

SUSTAINABLE PROGRAM

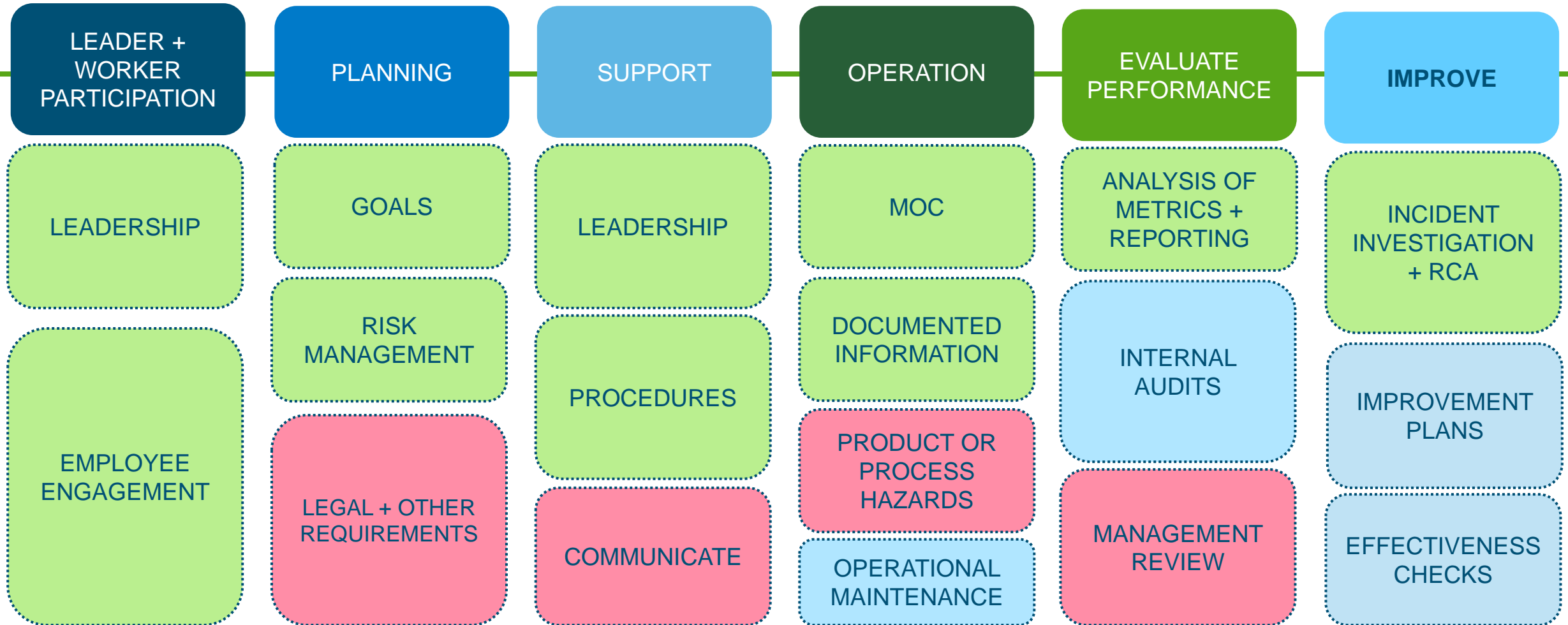
Process Safety Systems	%
Process Safety-General	58%
Assessing Major Risks	63%
Management and Culture	77%
Process Safety Staffing	67%
Hazard ID and Risk Assessment	60%
Management of Change	24%
Process Safety Information	60%
Mechanical Integrity	60%
Procedures	60%
Auditing	65%



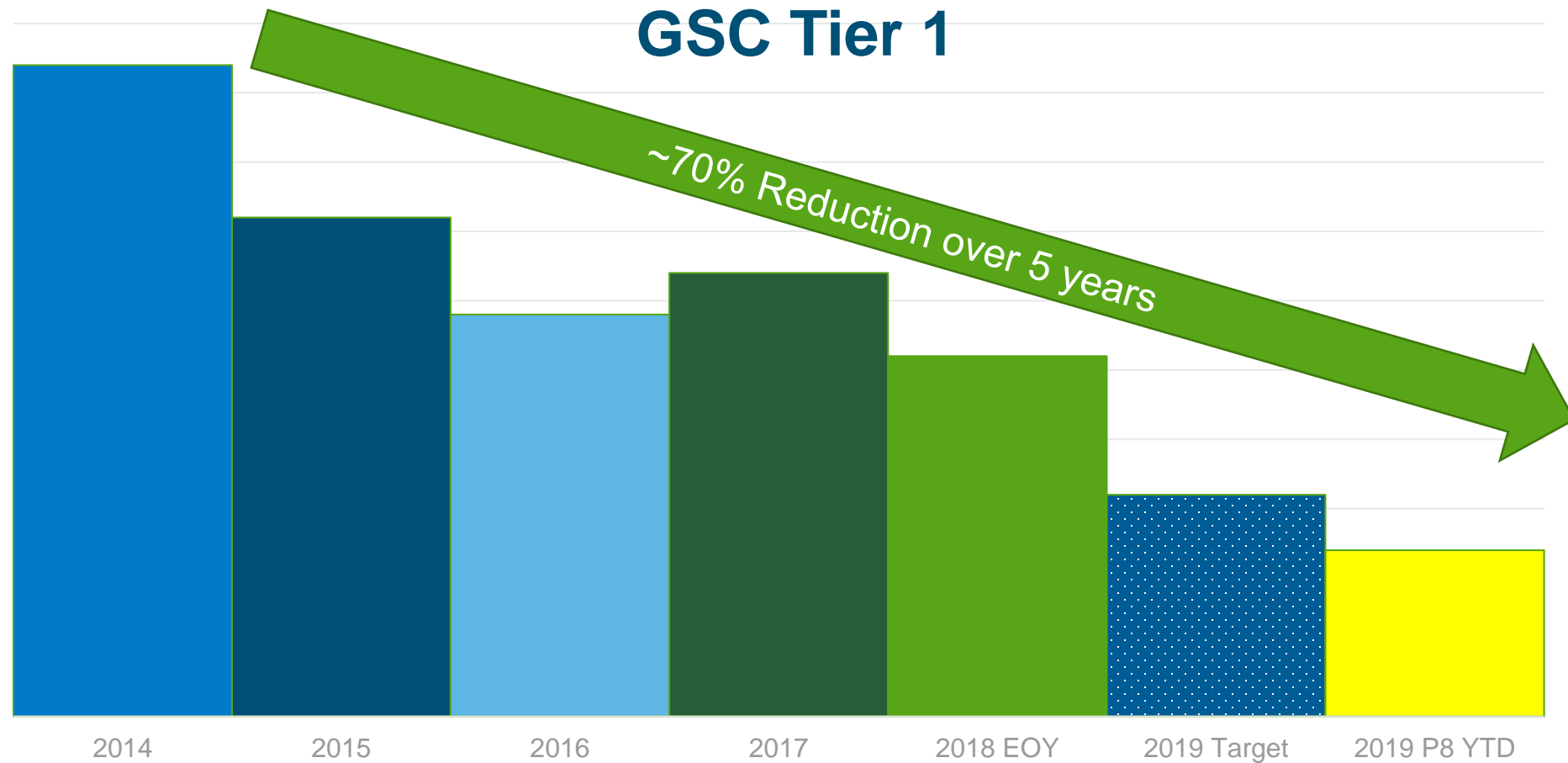
HOW ECOLAB IMPLEMENTED THE PS PROGRAM



THE SHE MANAGEMENT SYSTEM



DID THE PROGRAM WORK?



FUTURE PROCESS SAFETY NEEDS

WHERE ARE THEY?

- **Experienced Petrochem** retains the skills (reduced)
- University graduating **good engineers** in process safety space
- **Food, HealthCare, Logistics** are in the “Awareness / Boundary Conditions” stage
- **Industry Growth** creating a new demand
 - Private equity
 - Acquiring company has limited expertise
 - Introducing a new chemistry
 - Changing footprint

**QUESTIONS OR
COMMENTS?**

THANK YOU.

