



Transfer of Environmentally Sound Technology in the South Mediterranean Region

MED TEST

Engaging Private Sector in resource efficiency and pollution reduction

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MED TEST

Pollution Prevention from industrial land-based sources

Overall Objective: Build national capacities in UNIDO-TEST integrated approach and conduct pilot projects within priority industrial areas affecting the Mediterranean basin to demonstrate resource efficiency and environmental/economical performance.

Countries: Tunisia, Morocco and Egypt

Funding: GEF (MSP), Italian Government, Private Sector

Demonstrations: 43 industries, 7 industrial sectors

Status: under implementation (2009-2012)



Strategic Partnership for the Mediterranean Large Marine Ecosystem

MedPartnership

MED TEST



TEST principles



Resource Efficiency and Cleaner Production

Reducing energy & raw materials usage per unit of production



Introduction of management systems

Including environmental management accounting (EMA) and the adoption of the CSR approach



Eco-design of products

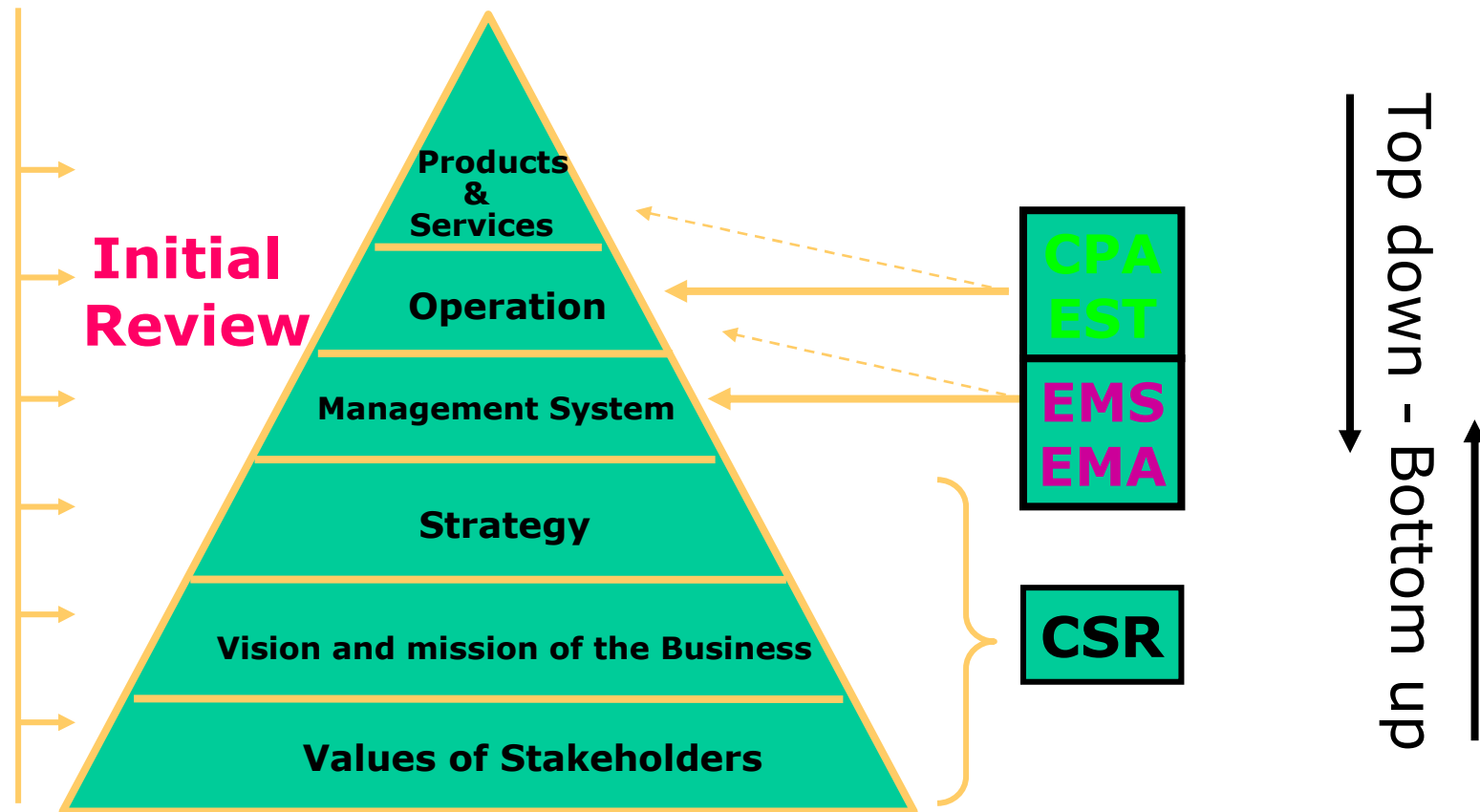
Enterprises can redesign their products so that they contain less materials (dematerialization) or use less harmful substances



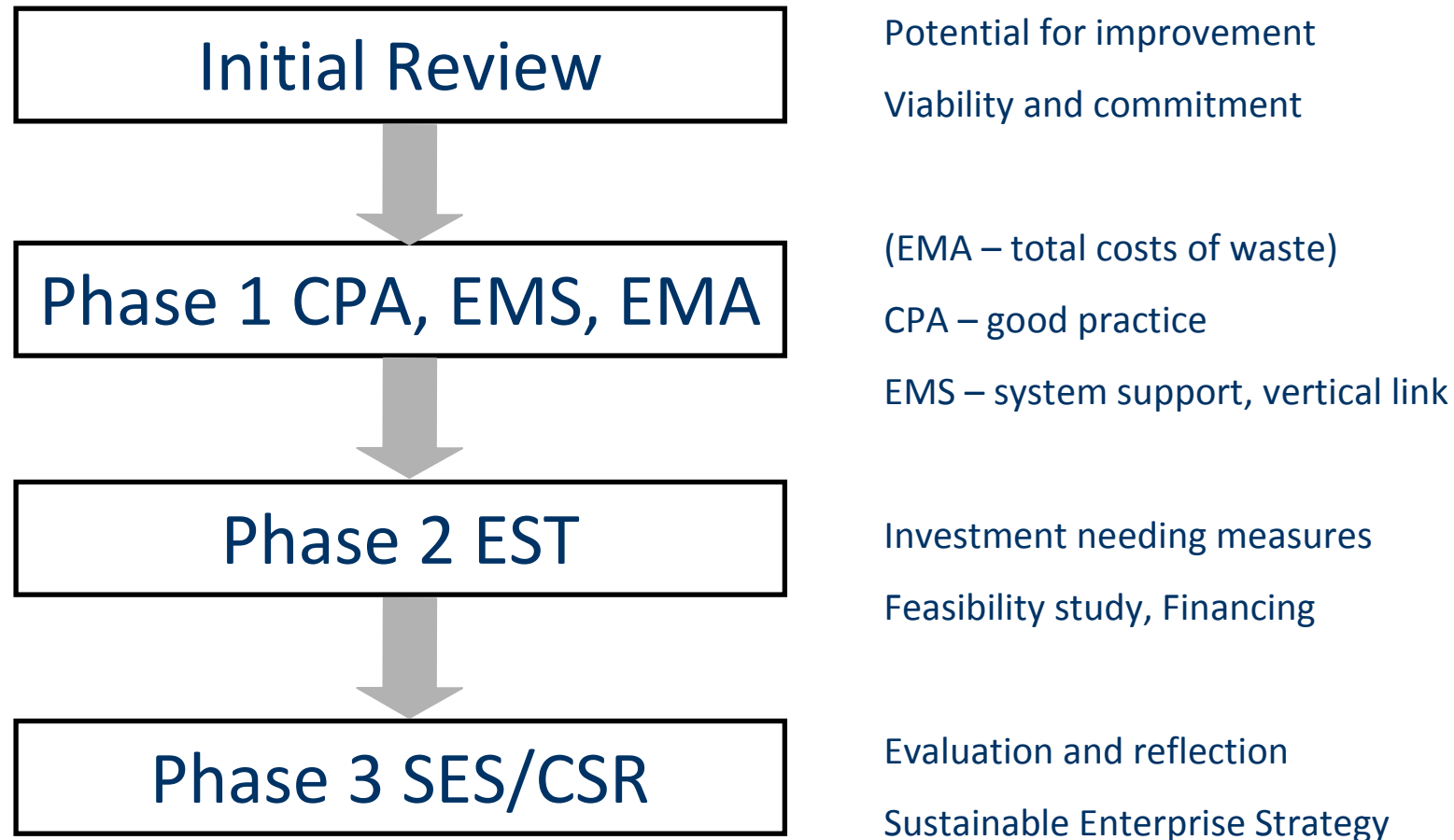
Recycling and reuse of waste/water



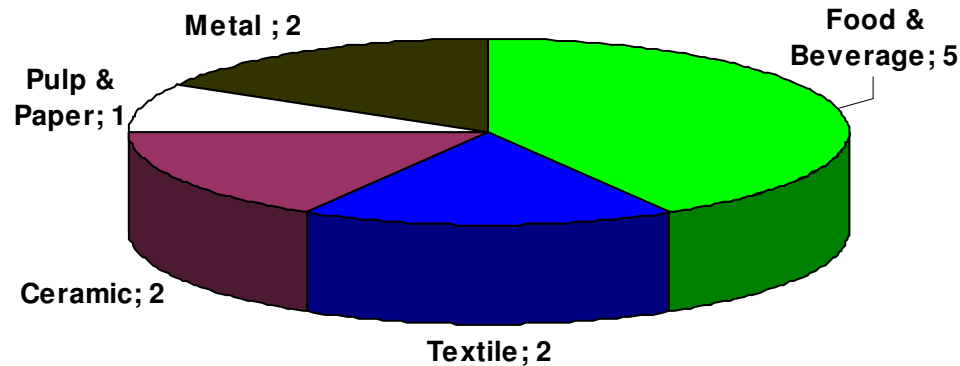
TEST TOOL BOX & THE Management Pyramid



TEST – major steps



MOROCCO - Industry projects

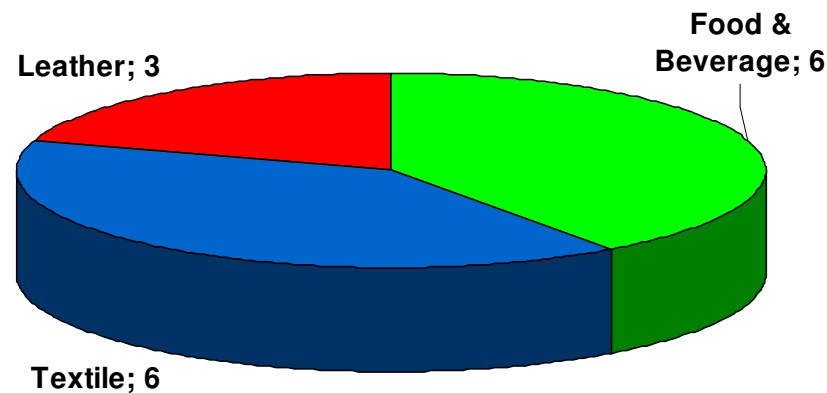


SMEs: 40-500 employees

Company	Sector
FROMAGERIES BEL	Food
BOA	Food
COLAINORD	Food
CUMAREX	Food
C2M	Food
PAPELERA DE TANGER	Paper
LAVESMA	Textile
ECOLORENTEL	Textile
INDUSTUBE	Mechanical
ALLUMINIUM DU MAROC	Mechanical
GHORGHIZ CERAME	Ceramic
CERAMICA DERSA	Ceramic



TUNISIA – Industry projects

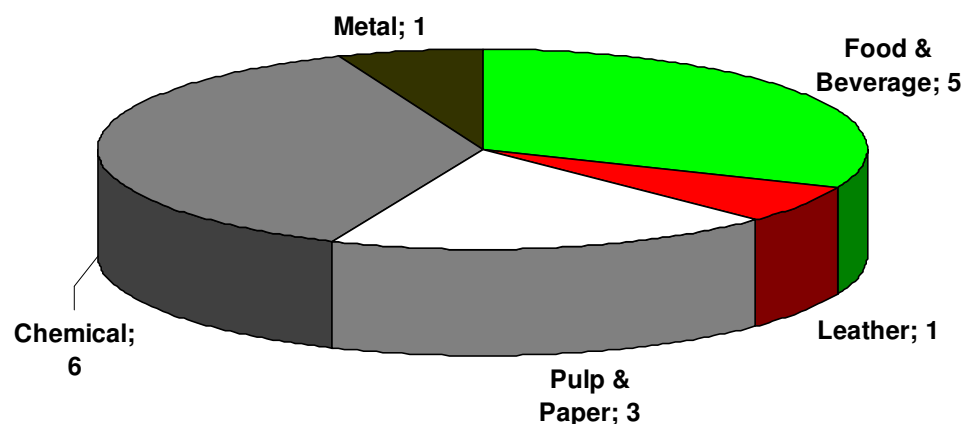


SMEs: 40-500 employees

Company	Sector
GIAS	Food
SCAPCB	Food
Tunisie Lait	Food
SBC (Delice)	Food
Societ� Nouvelle de boissons	Food
CLC (Delice)	Food
Megastone	Textile
Traitex	Textile
Garment Dyeing Service	Textile
Star Wash	Textile
TFM	Textile
Gartex	Textile
TMM	Leather
SMCP	Leather
Tannerie du Nord Utique	Leather



EGYPT - Industry projects

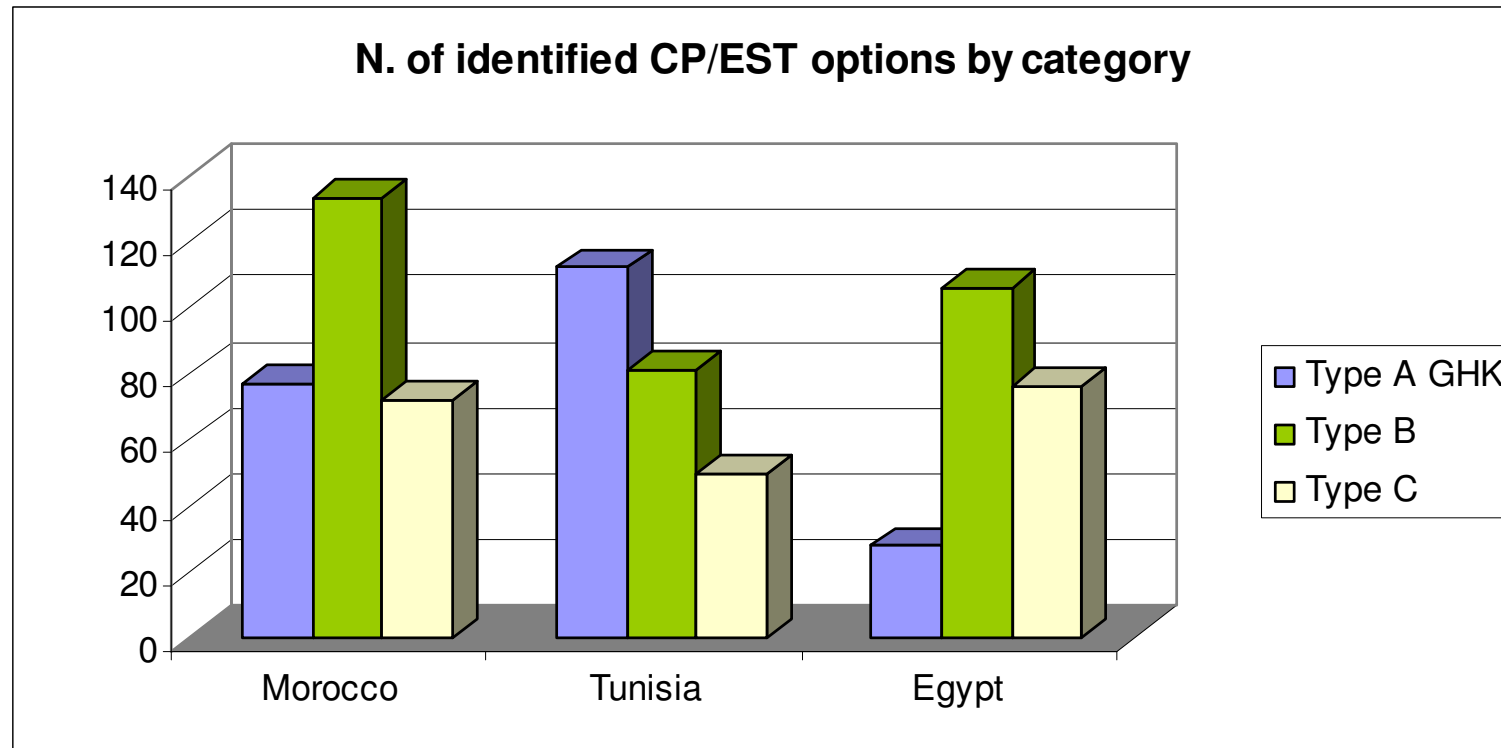


**SMEs and large companies
up to 2,000 employees**

Company	Sector
Starch & Yeast	Food
Galina	Food
Givrex	Food
Edfina	Food
Nile soft drinks (Crush)	Food
Egyptian Petrochemicals	Chemical
Alexandria Sodium Carbonate	Chemical
Misr chemical	Chemical
Extracted oils	Chemical
Mirs Petroleum	Chemical
Arab Caps for Gelatine	Chemical
Rakta	Paper
National Paper company	Paper
Moharam press	Paper
Attef tannery	Tannery
Tefal Zahraan	Mechanical



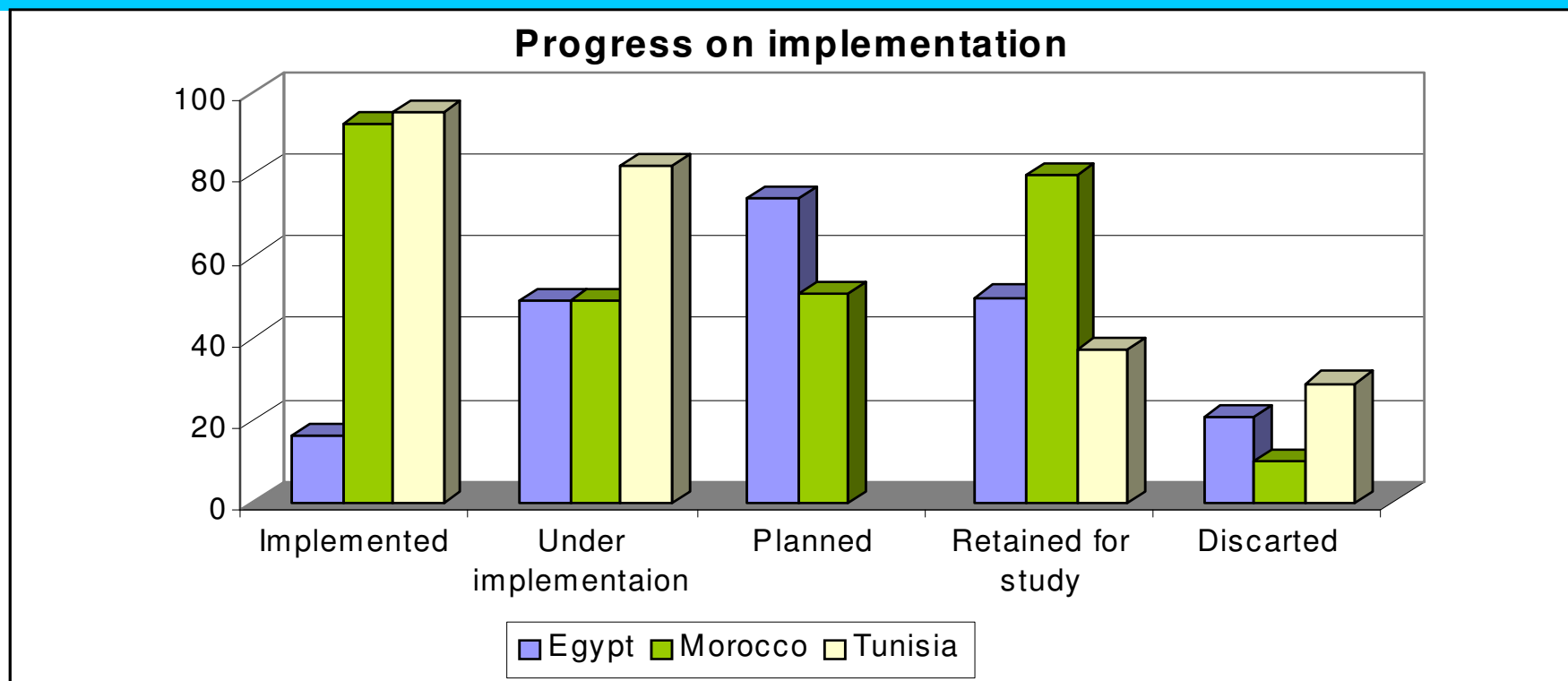
Identified CP/EST options



	Tunisia	Morocco	Egypt	TOTAL
Total n. of CP/EST options identified	243	282	210	735



Progress on implementation CP/EST



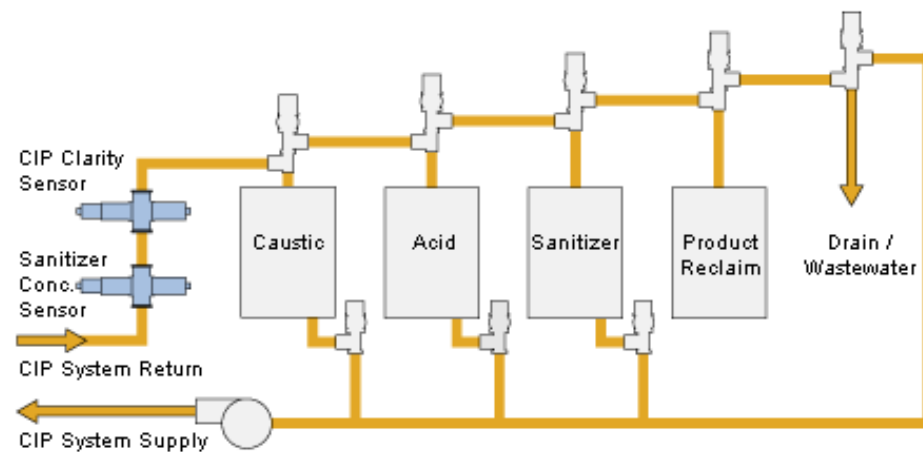
	Tunisia	Morocco	Egypt	TOTAL
Implemented + Under implementation	73%	50%	31%	52%



Food Industry Best Practice

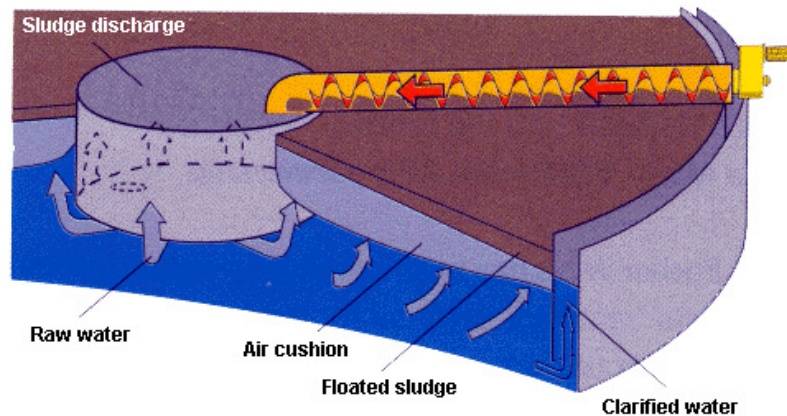
Optimization of Cleaning in place (CIP) -

CIP is the method used in sanitary processing plants to clean tanks, piping and even workspaces between production batches by automatically re-circulating detergent and rinse solutions. The washing process consists of several cycles in which rinsing material is recycled through the vessels, pumps, valves and other process equipment in the flow system.



Pulp & Paper Industry Best Practice

Fiber recovery - DAF



DAF systems using fiber separation from wastewater allow for small size fibers removal and recycling as well as clarified water recycling. This is a common viable technology in the pulp & paper industry.

Advantages:

- ✓ Fiber recovery
- ✓ Optimal water loops closure
- ✓ Primary treatment WWTP
- ✓ PBP < 1 year



Practice

Cleaning in place of fermenters



Installation of Rotating spray balls can optimize Cleaning in Place of large fermentation tanks. This solution is widely used in modern food/beverage, pharma and yeast industry.

Advantages:

- ✓ up to 70% water reduction for CIP
- ✓ up to 60% energy savings for CIP
- ✓ Product recovery
- ✓ Reduced hydraulic load WWTP
- ✓ PBP < 1 year

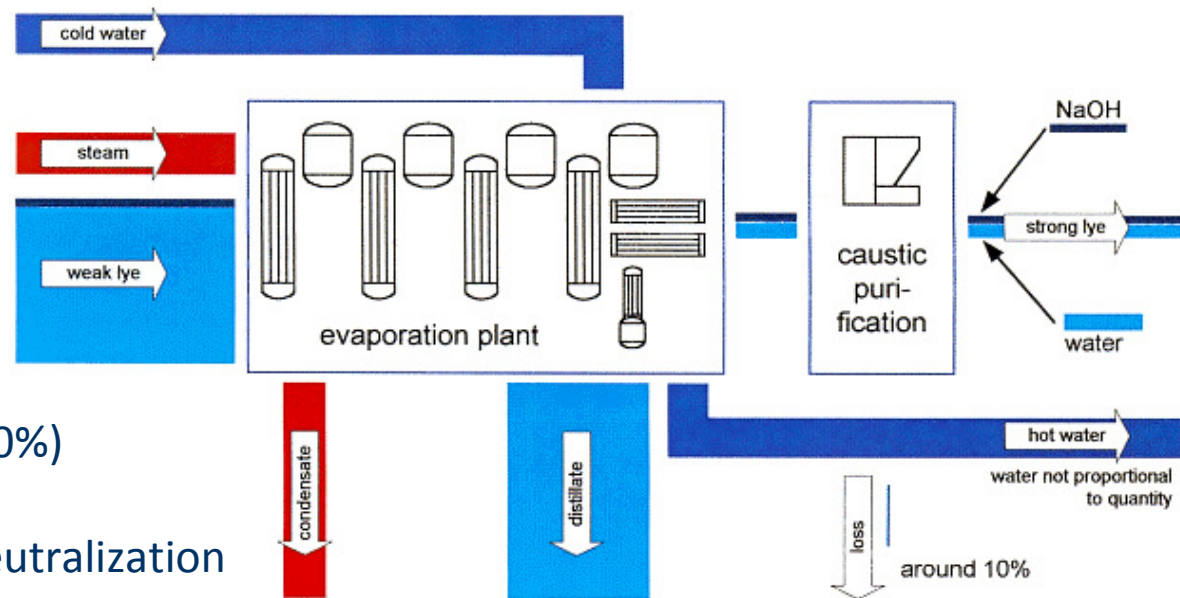


Textile Industry Best Practice

Soda recovery mercerizing



During the mercerizing process the diluted caustic soda (weak lye) is normally drained. Caustic Soda Recovery System is an evaporating energy efficient technology combined with peroxide lye cleaning.



Advantages:

- ✓ Soda recovery (above 80%)
- ✓ No alkaline wastewater
- ✓ Reduced Chemicals x neutralization
- ✓ Hot water generation
- ✓ PBP < 1 year



Lessons learned (Macro level)

The level of achievements in industry depends on key factors:

- Environmental legislation and Enforcement
- Access to finance: incentive schemes and business environment for investment
- Supply chain and market requirements (exporting sectors)
- Utility costs



Costs of utilities

Utility	TUNISIA Unit Cost [USD]	MOROCCO Unit Cost [USD]	EGYPT Unit Cost [USD]	Italy Unit Cost [USD]
Water (m3)	0.64	1.063	0.24-0.34	0.7-2.1
Wastewater discharge (m3)	0.57	-	-	0.7-1.4
Electricity (kwh)	0.09	0.094	0.042	0.25
Gas (Th)	0.017	0.10-0.13	0.007	0.07

1 m3 gas= 38MJ = 9 Th

1kg propane/butane = 50/49 MJ



Lessons Learned (Micro level)

Engaging and working successfully with private sector requires:

- ✓ Integrated approach that links sustainability to core business strategy, management systems and manufacturing processes
- ✓ Confronting and profiting from environmentally-related standards/technology in the global market (key driver)
- ✓ Training, Monitoring, Follow up & Top management engagement
- ✓ Multidisciplinary skills and Technical sectorial expertise
- ✓ Flexible approach depending on company size and baseline, possibly linking to financing investment schemes (SMEs)



Conclusions

Private sector is an “excellent” partner for GEF

- Co-financing > 1:10
- Huge potential for Stress reduction

Key issues for GEF/Private Sector partnership:

- Pragmatic approach and business language
- Tailored programmes for SMEs and Large companies
- Country demonstrations– industry need to be convinced
- Upscale and Replication



THANK you for your ATTENTION!

MERCI pour votre ATTENTION!

