

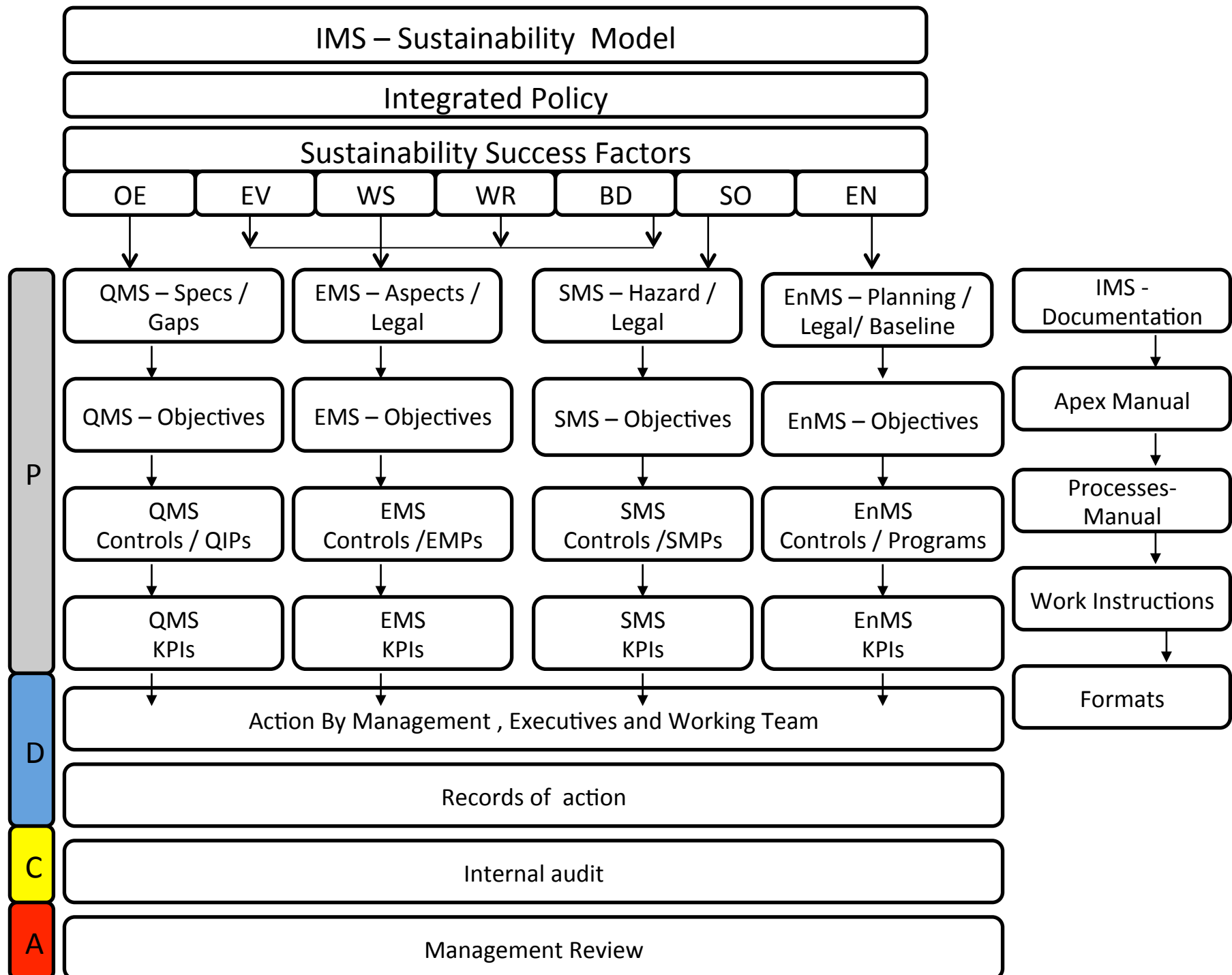
Case Study On Sustainability – Leather Tannery Cluster

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URS Productively

Challenges for Tannery SME

- Adherence to environmental standards stipulated by market players and state authorities
- Customer designated audits
- Technical challenges such as TDS and sludge



Typical Operations in Tannery
Raw to WB Tanning
Leather stores
sammying
Splitting
shaving
DYE House
SETTING
Vacuum
Hooking
STAKING
Trimming
toggling
Buffing
Auto Spray
Hand Spray
Roller coating
plating
finishing
Packing

Water Consumption Opportunity

Type	BAU Lit /SFT	Best Practice Lit/ SFT	Potential
Raw to SF	35	20	
SF to Tanning	15	10	
Raw to Tanning	50	30	20

TYPICAL EMPS FOR WATER

Provide appropriate flow meters in necessary lines

Review processes to reduce water consumption

Establish Consumption norms for Each Operation
Check process sheet for modification

Construction of small tank , pump, pipeline for recycle
(Recycle reliming to liming)

Modify drum paddle design

Separate effluent streams
Portable pumps for proper segregation

Recycle water from ETP leading to achieve ZLD

ZLD Process

- Conventional treatment system,
- Reverse Osmosis system for desalination
- Evaporation of the saline reject.

ZLD – Facilitation for a cluster

T-1

T-2

T-3

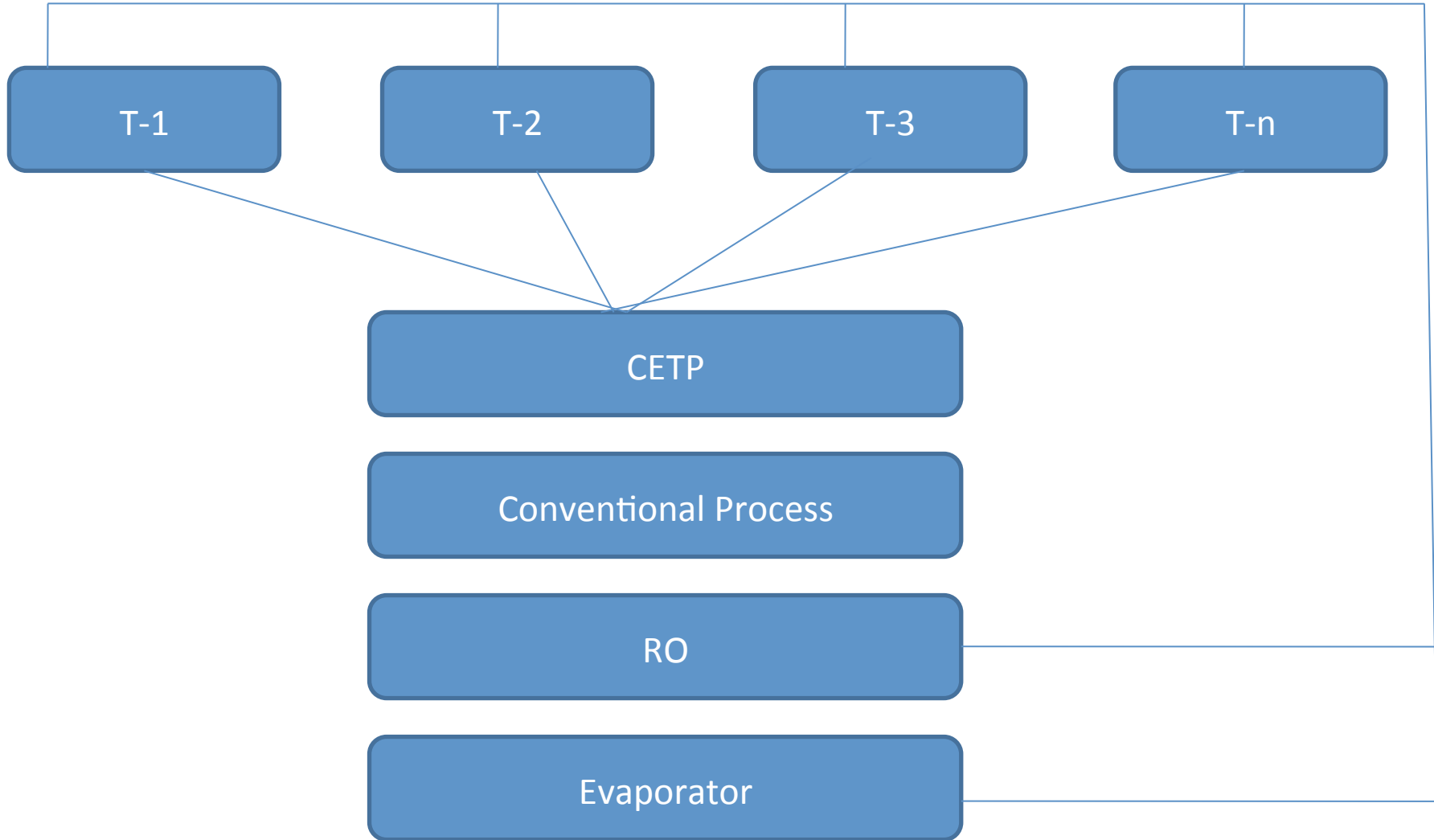
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CETP

Conventional Process

RO

Evaporator



Process Description

- Mechanized Rake Bar rake Screen
- Receiving Sump,
- pre-settler units,
- Rotary fine screen
- Equalization tank.
- Flocculated to facilitate coagulation and
- Primary Clarifier - to the Sludge Drying Beds or Filter Press.
- Secondary and tertiary clarifier
- Diffused Aeration System

- The Sludge from the primary, secondary and tertiary units is discharged to the Sludge drying beds or to the chamber Filter Press for dewatering.
- The dried sludge is then disposed of to the Secure Land Fill (SLF) system.
- The back washing effluent from Sand filters and Leachate from the SLF to discharged back to the Receiving Sump.
- The treated effluent the RO system - softening - Micron Filters -Dual Media Filters – Ultra filtration - organic scavenger ..
- Multi Stage evaporation in a seven stages
- The permeate from RO system and the condensate from evaporator are combined and distributed back to the tanneries for use in manufacturing process through a recovered water conveyance system with overhead tanks at different locations in the cluster.
- The salt-laden solid residue is stored in bags and a huge salt storage yard has been constructed for the purpose. Efforts to re-use the salt in preservation of hide/skins is underway.