

Advanced systems for the enhancement of the environmental performance of **WINE**ries in **C**yprus

ENVIRONMENTAL MANAGEMENT **S**YSTEM

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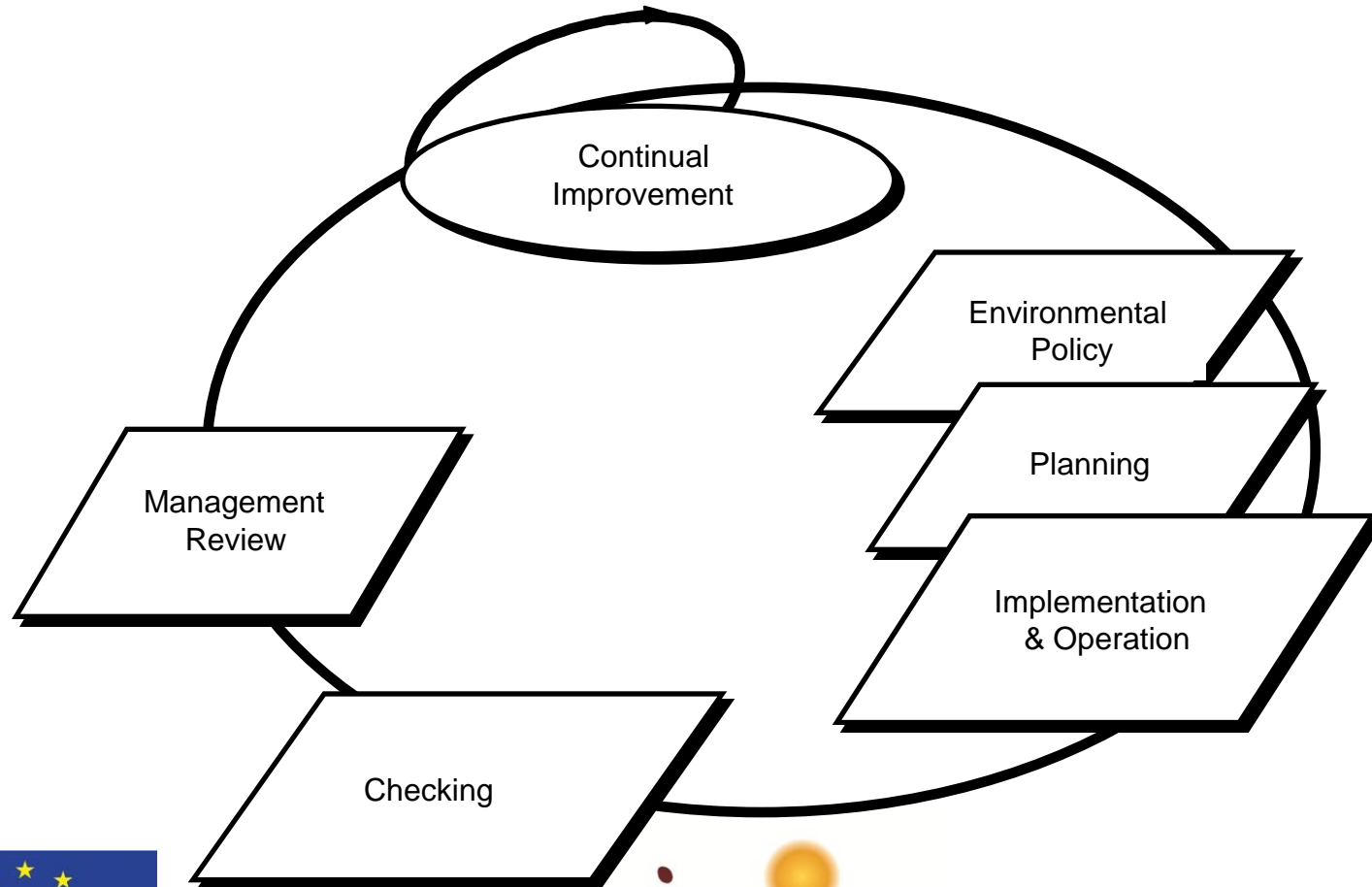


What is an environmental management system (EMS)?

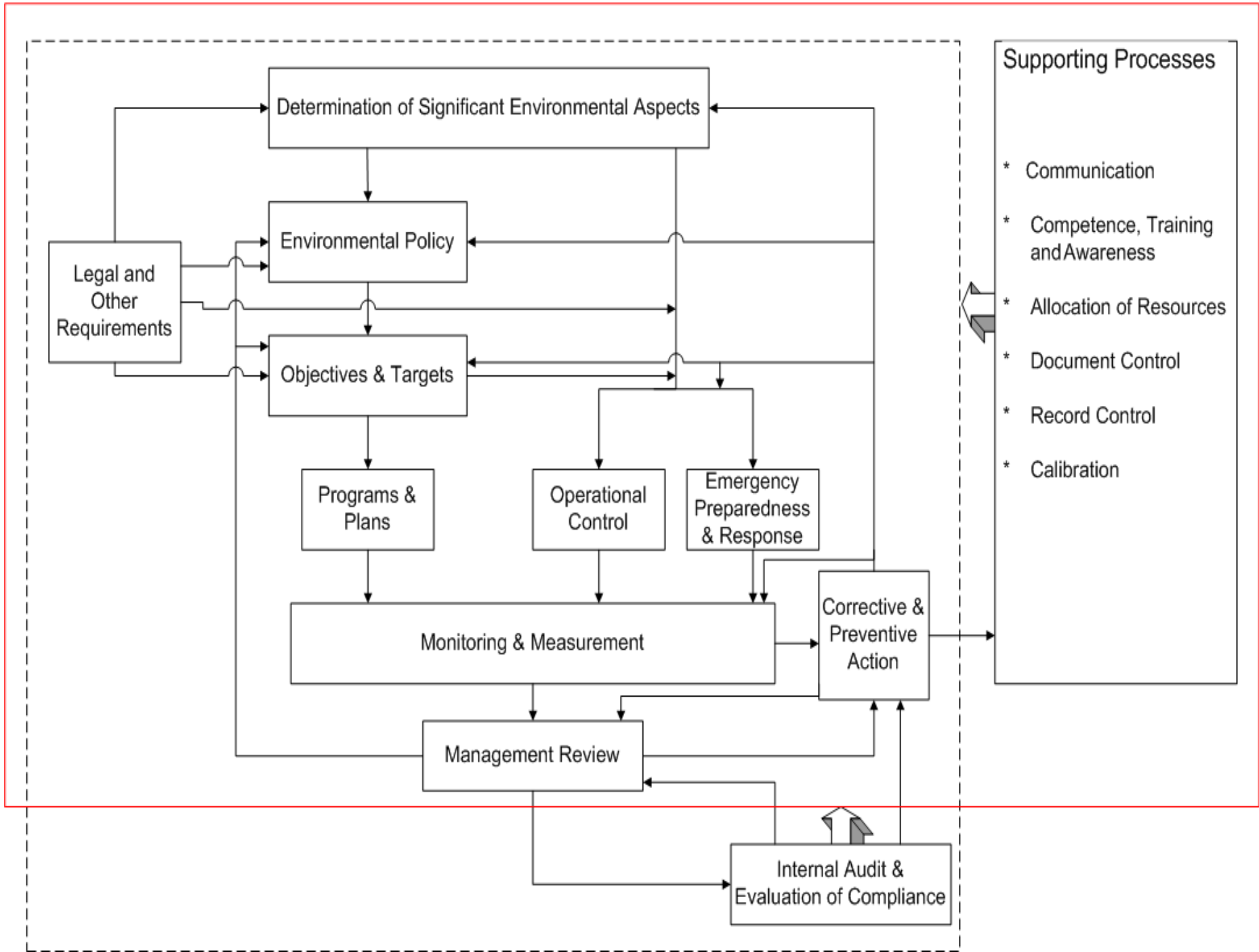
Part of an organisation's **management system** used to develop and implement its **environmental policy** and manage its **environmental aspects**.



The EMS model of continual improvement



INTERACTIONS BETWEEN THE EMS ELEMENTS



Why have an EMS?

- Improve management of environmental impacts
- Set targets to reduce energy use, water use & waste to landfill
- Define key responsibilities for achieving targets
- Monitor and measure environmental performance against key indicators
- Ensure due diligence and ongoing consideration of legal and other environmental requirements



Role of management in establishing & implementing an EMS

- **Develop & approve environmental policy as a statement of commitment**
- **Provide resources**
- **Appoint management representative(s) to ensure EMS is established, implemented and maintained, and to report on performance of EMS including recommendations for improvement**
- **Regularly review the EMS to ensure its continuing suitability, adequacy and effectiveness.**



Our Environmental Policy

- Sets the direction for the way the organisation plans to manage its environmental impacts
- Set by top management
- Acts as the pinnacle of the EMS
- Includes commitments to pollution prevention, legal compliance & continual improvement
- Includes framework for objectives & targets
- Must be effectively communicated & maintained



Planning the EMS

- Environmental aspects
- Legal & other requirements
- Objectives, targets & programs



Internal audit

- **Establish & implement internal audit program to:**
 - evaluate conformity with requirements of EMS
 - evaluate effectiveness of EMS
 - provide information to top management



Steps to gaining certification of an EMAS

1. Apply to accredited conformity assessment body for EMAS certification
2. External comprehensive documentation review & preliminary audit to evaluate readiness for certification
3. Implement improvements from documentation review & preliminary audit
4. Certification audit



Steps to gaining certification of an EMAS

5. Management review, & implementation of further improvements
6. Plan corrective action in response to any nonconformities raised
7. Certification granted for 3 years
8. Surveillance audits initially 6-monthly then annually
9. Annual management reviews
10. Triennial recertification audits.



Conclusion

- An environmental management system takes time and commitment from the entire organisation.
- Effective running of an EMS will provide ongoing environmental benefits, cost savings and contribute to building an attractive work place culture.



EMAS-TSIAKKAS WINERY

- EMAS-easy
- 10-steps process
- Eco-mapping method



EMAS



Environmental review – Environmental Action Plan

The major environmental impacts identified were:

- **Production of packing waste material.**
- **Air emissions and pollution resulting by the use of pesticides, the production stage, the use of refrigerants and delivery of the final product.**
- **Water pollution through watering of grapevines and wine making.**



Environmental review – Environmental Action Plan (continue)

- Consumption of non-renewable resources.
- Soil contamination by the use of pesticides and fertilizers.
- Health and safety issues such as fire hazard.



Aspects	Environmental Impacts From Activities/Process/ Equipment					
Waste	Carton boxes	Bottles	Wooden barrels	corks	labels	Organic waste from grape skins
Air	CO2 emissions	Sulphur emissions	Ozone (refrigarants)			
Water	Nitrate pollution Irrigation of wine	Cleaning of tanks	Cleaning of common spaces	Washing of bottles		
Urban Situation	Forestry practices for packing material	Health effects of substances from label (ink, glue)	Forest fires threat due to lack of a fire system			
Soil	Fertility reduction from overuse of pesticides	Ground contamination from improper fertiliser storage facility	Ground contamination from discharge of non-treated water			
Resources	electricity	Gasoline used in transportation	Electric energy consumption	Non-recycled glass for wine bottles	Absence of renewable energy	

Building the system for environmental performance optimization

- EMS launch – **June 8th 2010**
- Environmental Action Plan - Objectives
- 1st Internal Audit – **January 3rd 2011**
- Additional Internal Audit – **September 6th 2011**
- EMAS-easy Audit – **March 9th 2012**
- 2nd Internal Audit – **September 9th 2012**



Building the system for environmental performance optimization

Table 1: Tsiakkas Winery yearly environmental objectives

	Objective	Indicators
1	Reduce electricity consumption by 5%	kWh of electricity
2	Ensure that packaging is not harmful to human health	No of specifications
3	Provide a fire safe environment	Completion of work
4	Comply with EU Directive on pesticide residues in wine	Completion of Analyses
5	Minimise impact on non-sustainable forestry	No. of certificate of compliance
6	Eliminate solid waste from ending up in landfills	kg of waste
7	Provide environmentally safe chemical storage facility	m ² of secure storage facility
8	Treat wastewater	m ³ of treated water
9	Safeguard water quality and minimize the use of pesticides	No of analysis
10	Reduce the spray of Sulphur	Liters of Sulphur sprayed
11	Eliminate CO ₂ emissions	Tons of CO ₂ released
12	Eliminate Vehicle Emissions during delivery of products	Purchase of new Vehicle
13	Obtain Environmental Specification for main chemical products used	Number of Specifications
14	Avoid pesticide contamination	m ² of secure storage facility
15	Promote alternative methods of fertilizers during agriculture of grapevines	kg of compost used

1st Internal Audit

Problem	Proposed Solution	Date of Implementation
Not all environmental/health specifications for raw materials and packaging have been obtained by suppliers	Resubmit request clearly specifying the type of information needed by the EMS	28/2/2011
Not all equipment in production have their CE mark specifications information	Identify a clear list of the equipment that need CE mark and assess their possible replacements Do a replacement/upgrade list	31/1/2011
The analysis on pesticide residues in grapes has not been carried out	TALOS and Environmental Manager will come up with a cost effective solution to this matter	30/6/2011
The replacement of energy efficient lamps has not taken place	Environmental Manager will continue to inquire in the market and also see possible government subsidies in undertaking a replacement of lamps on a small pilot scale	31/12/2011
The water analysis for production has not been carried out	Carry out water analysis the soonest possible	31/1/2011
The possibility of obtaining permission to drill a second water pump has not been examined	Inquire with competent authorities the possibility of obtaining a permit for drilling	31/7/2011
The CO ₂ used in production and packaging is not captured	Research and produce evidence on the subject and inquire alternative manners on packaging and storage of wine avoiding CO ₂ gases and using alternative ones	28/2/2011

Additional Internal Audit

Problem	Proposed Solution	Date of Implementation
Analysis of data from water and energy consumption is not being made useful.	The Management must analyse the consumption trends in order to identify possible preventive measures towards efficient resource use.	31/12/2011
The implementation of the Directive with regards to pesticide residues in grapes is not clearly guided by the competent authorities.	RTD Talos Ltd is presently examining ways by which the required analysis is carried out.	31/1/2012
The Fire Safety System is still not installed.	The Management in collaboration with the Environmental Manager must find a more sustainable solution to this urgent and very important outstanding matter.	31/1/2012

EMAS-easy CERTIFICATION AUDIT



**Thank you for
your attention!**

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