

SWIM and Horizon 2020 Support Mechanism

Working for a Sustainable Mediterranean, Caring for our Future

The Environmental Management Systems (EMSs) standards and their application in tanneries

Tiberio Daddi

INSTITUTE
OF MANAGEMENT



Scuola Superiore
Sant'Anna

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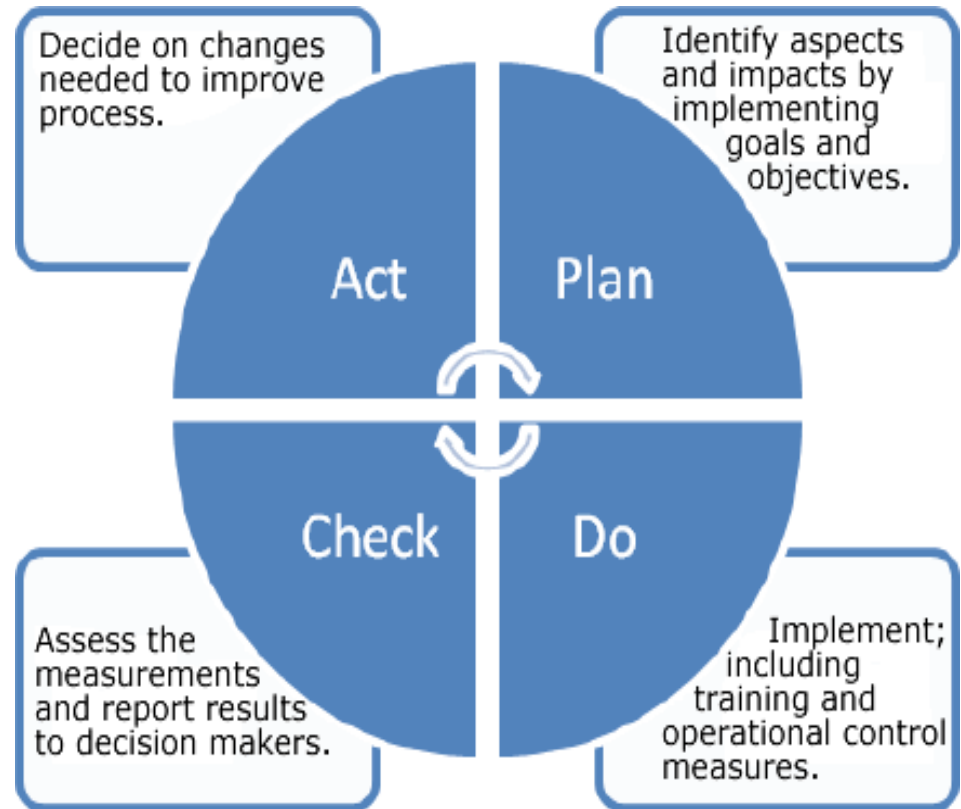
ATKINS

What is an Environmental Management System?

- **It is a system aimed to improve the capability to manage the environmental issues in an organisation**
- **It is based on standards that provide the rules to implement it**
- **The main important standards are the ISO14001 and EMAS Regulation**
- **It allows to obtain an environmental certification by a third party auditor**

Which is the role of Management System?

- A management system is a structured framework of practices and procedures
- The system is built on the Plan, Do, Check and Act Model



EMSs: main features



Voluntary instruments and suitable for every organization;



Systematic, unbiased and periodic effectiveness evaluation;



Active participation of stakeholder → employees training.



Drive for continuous improvement of environmental performances in order to increase efficiency;



Open dialogue, transparency and information;

Continual Improvement – Goal Setting

- **Establishing goals and program management:**
 - prevention of pollution
 - legal compliance since the beginning
 - continuous improvement of environmental performance
 - employee involvement
 - Environmental Statement and validated information external communication



The role of certification: EMAS

EMAS is a voluntary tool available to any organisation operating in any economic sector within or outside the European Union that wants to:

- assume environmental and economic responsibility;
- improve its environmental performance;
- communicate its environmental results to society and stakeholders in general.



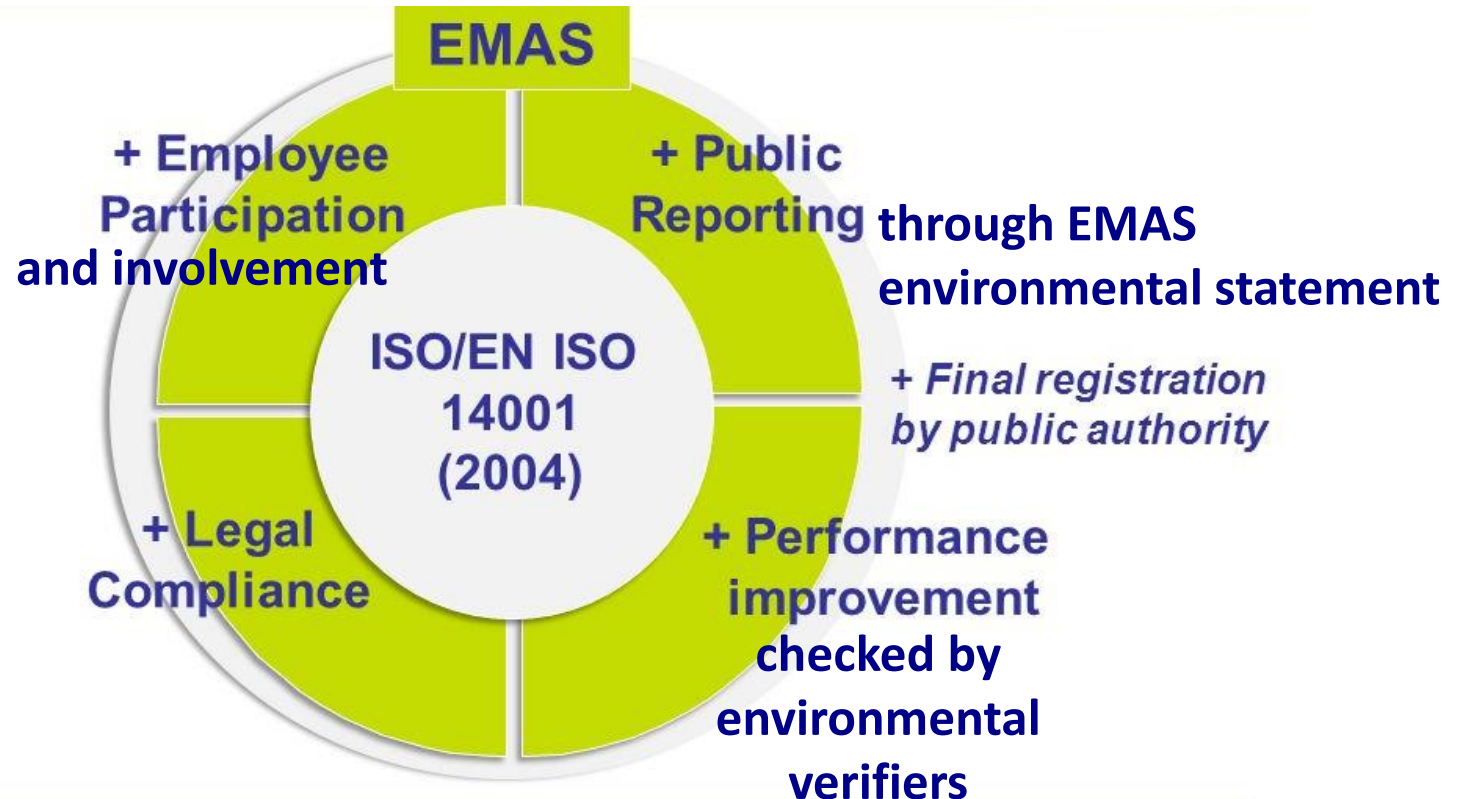
The role of certification: ISO 14001

- Voluntary
- Set up the by industry: countries can adapted into their legislation
- Is aimed to improve processes not performance itself
- Key aspect is that of continual improvement
- Doesn't require the publication of an environmental statement
- Provides the company with a guideline on how to manage environmental aspects
- Requires management commitments and involvement from all employees

ISO14001 and EMAS: differences

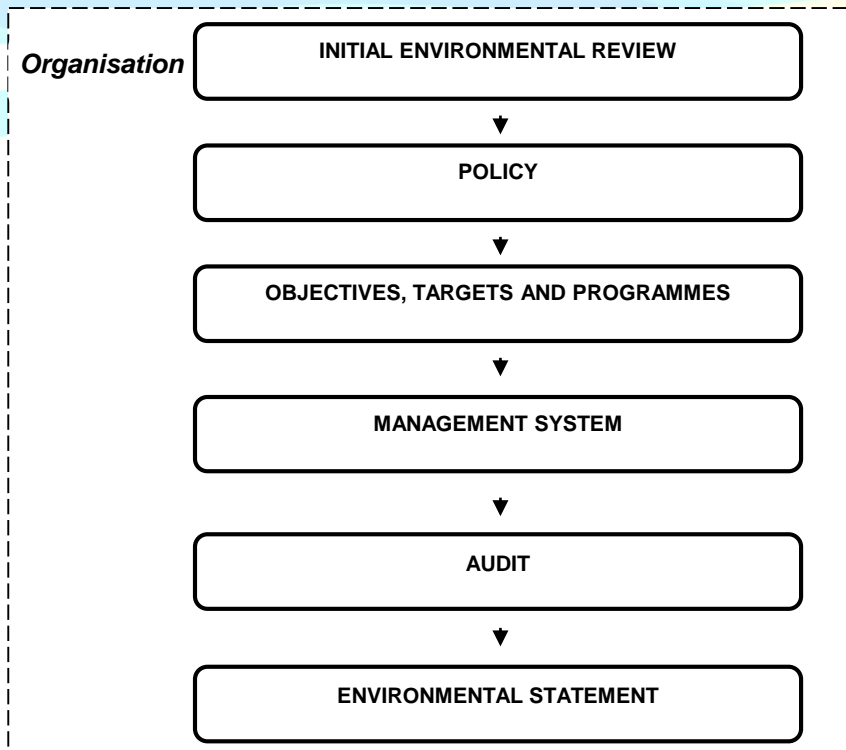
Topic	ISO 14001	EMAS
<i>Nature</i>	Private standard	Public Regulation
<i>Validity</i>	Valid at international level since its first issuing in 1996	Valid in Europe until 2009 and at international level since 2010
<i>External communication</i>	It is not a mandatory	It foresees to make available for the public an Environmental Statement
<i>Scope</i>	Organisations of all sectors	Organisations of all sectors and experimentally applied in industrial clusters

EMAS goes further than ISO14001



Main actors in EMAS and ISO 14001

- Competent Body and Accreditation Body
- Environmental verifiers
- Organizations
- Inspection Authorities (only in EMAS)

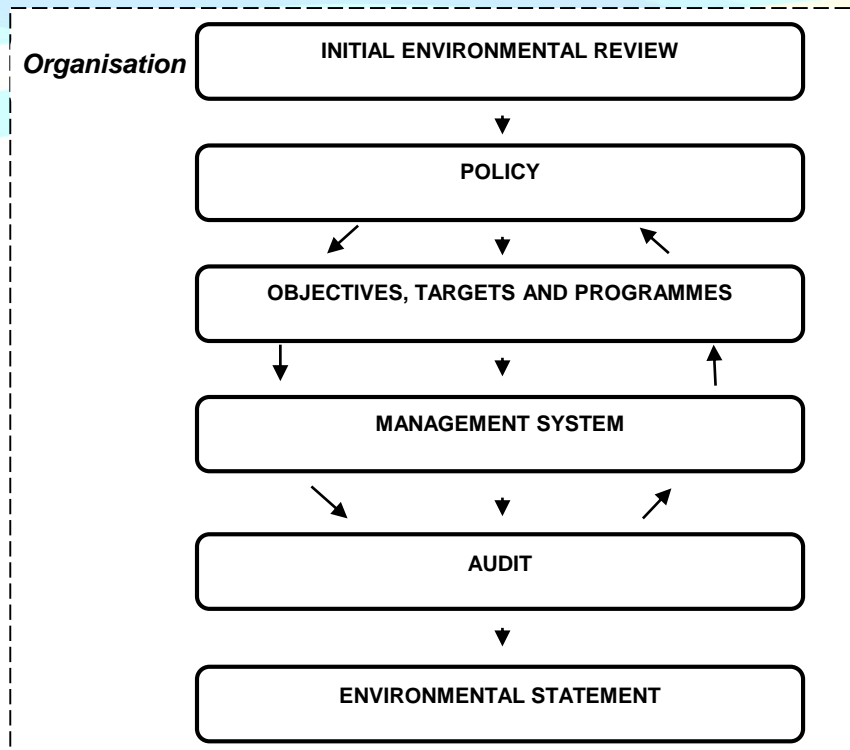


Key players

ACTIONS

European Commission

Member States

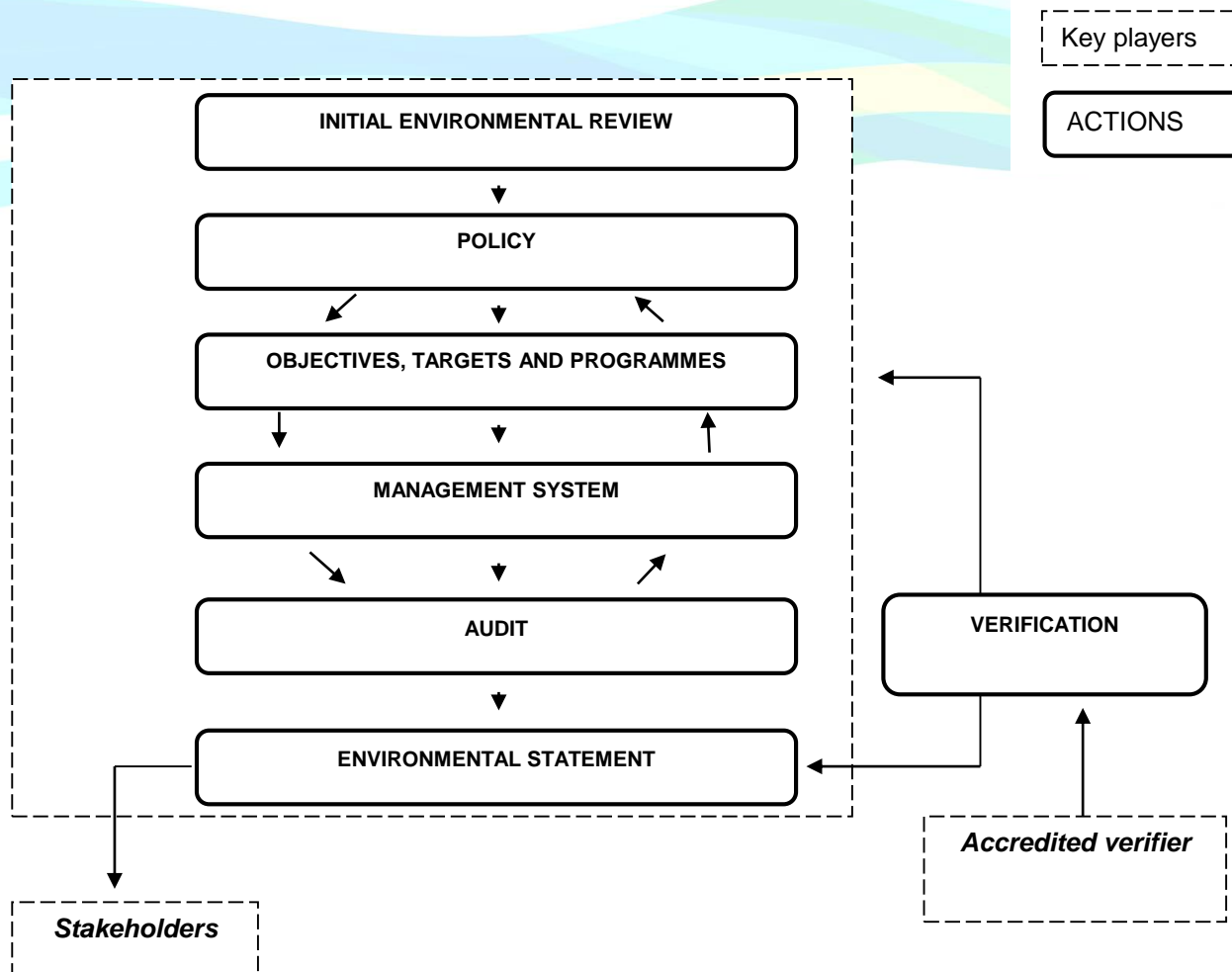


Key players

ACTIONS

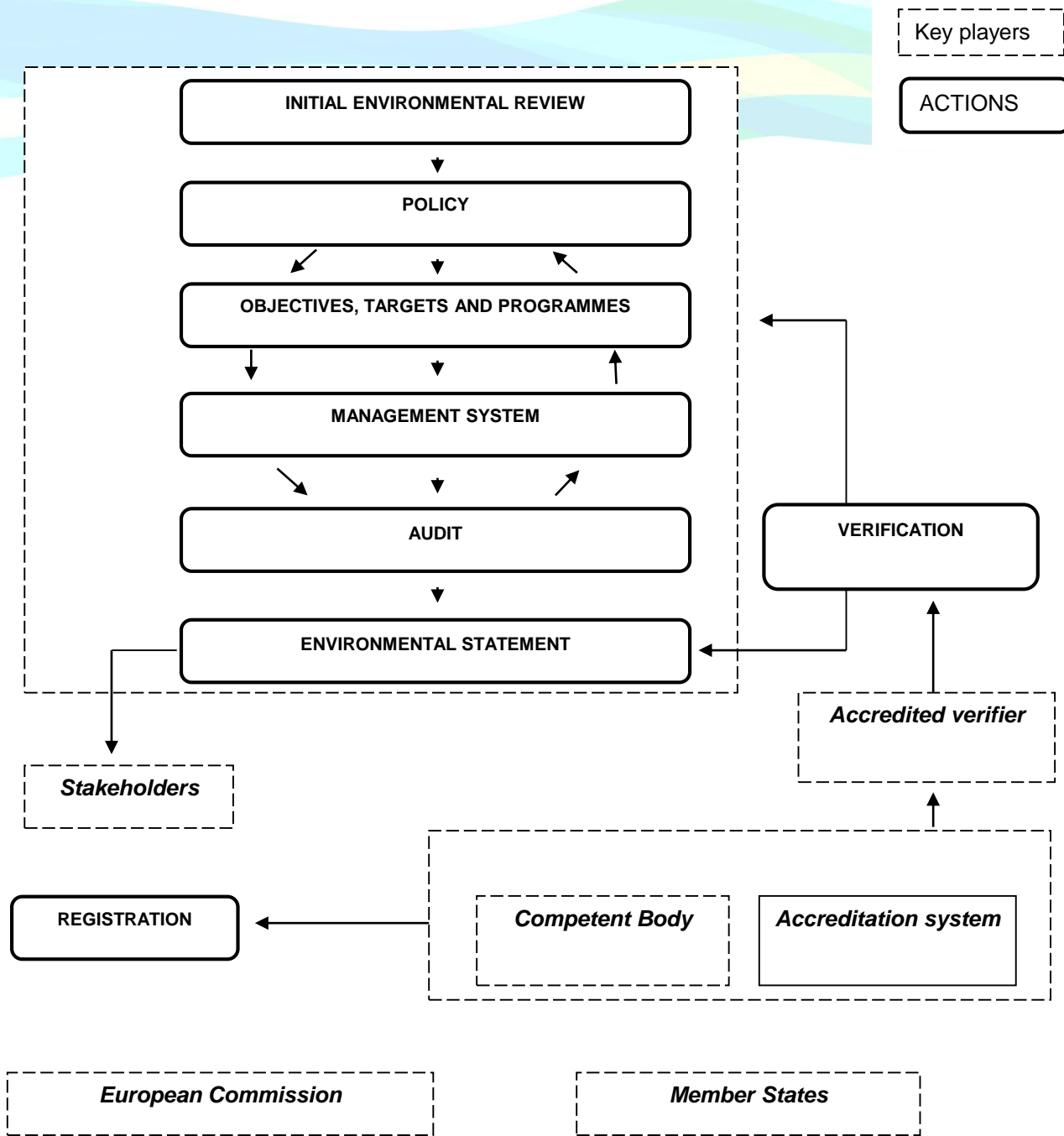
European Commission

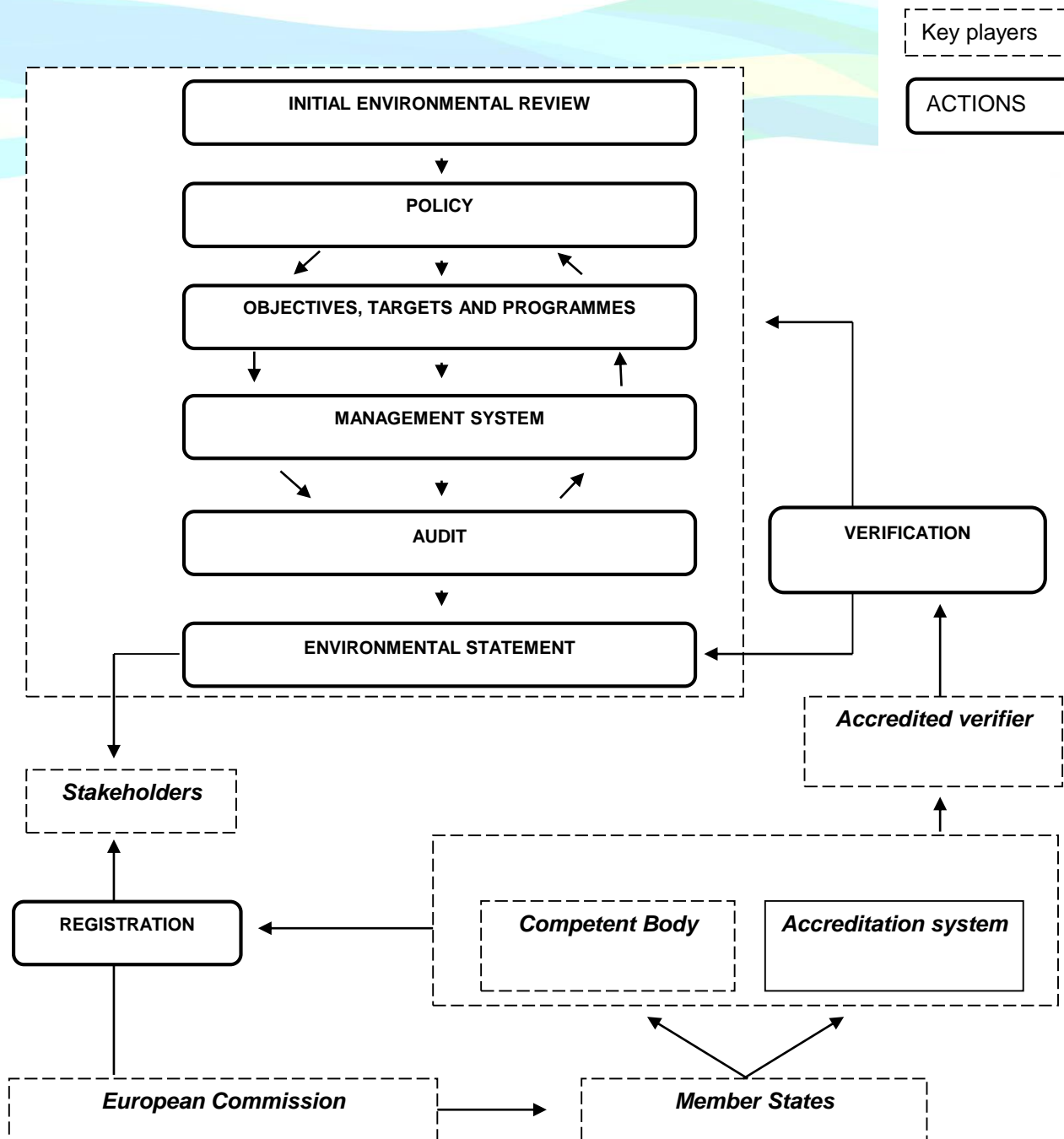
Member States



European Commission

Member States





The Core Elements of EMAS



EMAS

Premium benchmark for environmental management

Performance

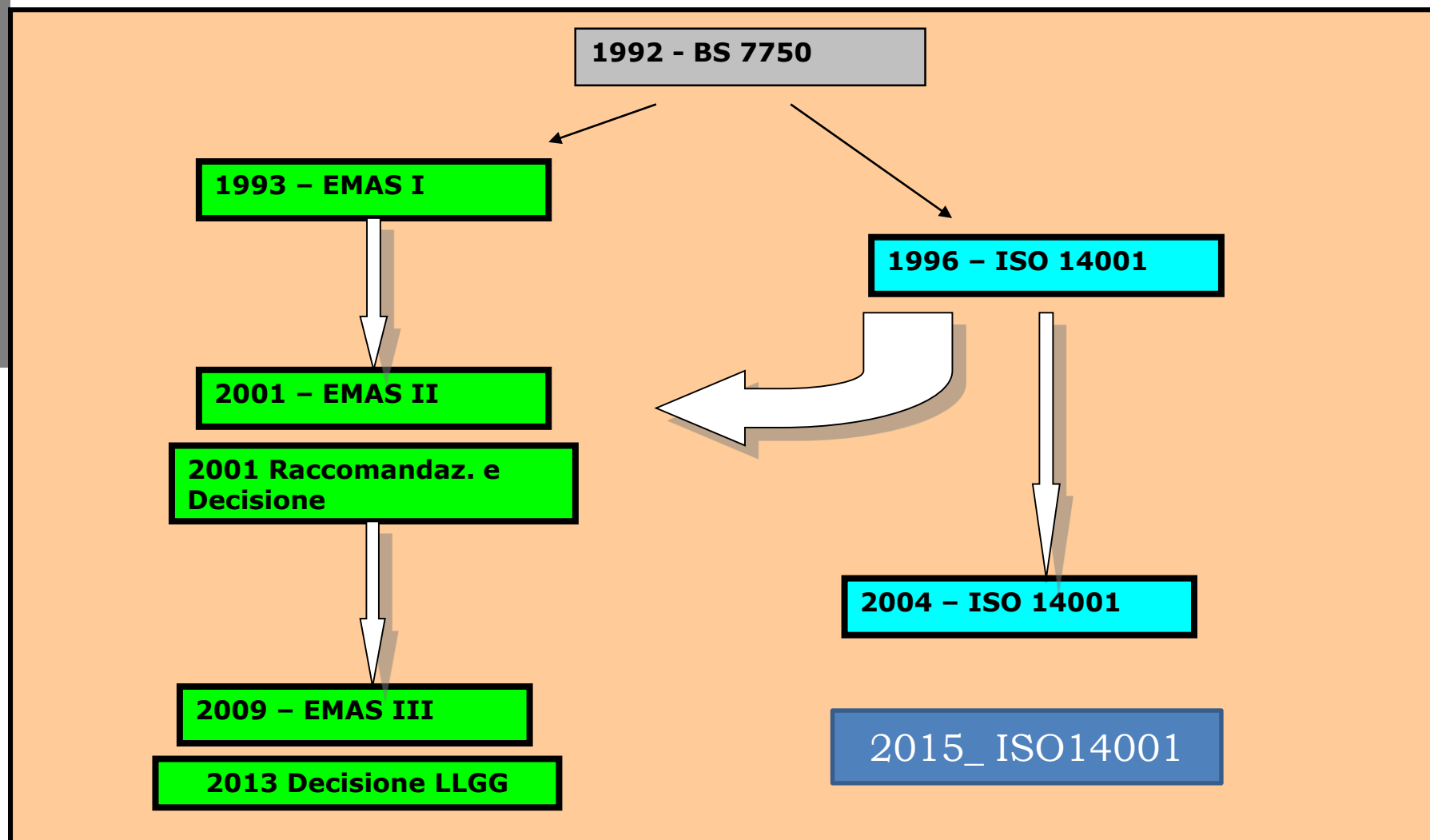
Carrying out annual updates of environmental policy targets and actions to implement and evaluate these targets

Credibility

Third party verification by independent auditors guarantees the value of both actions taken and disclosed information

Transparency

Environmental statements provide public information about the environmental performance of the organisation





Let's see some numbers



ISO14001

(fonte www.iso.org)

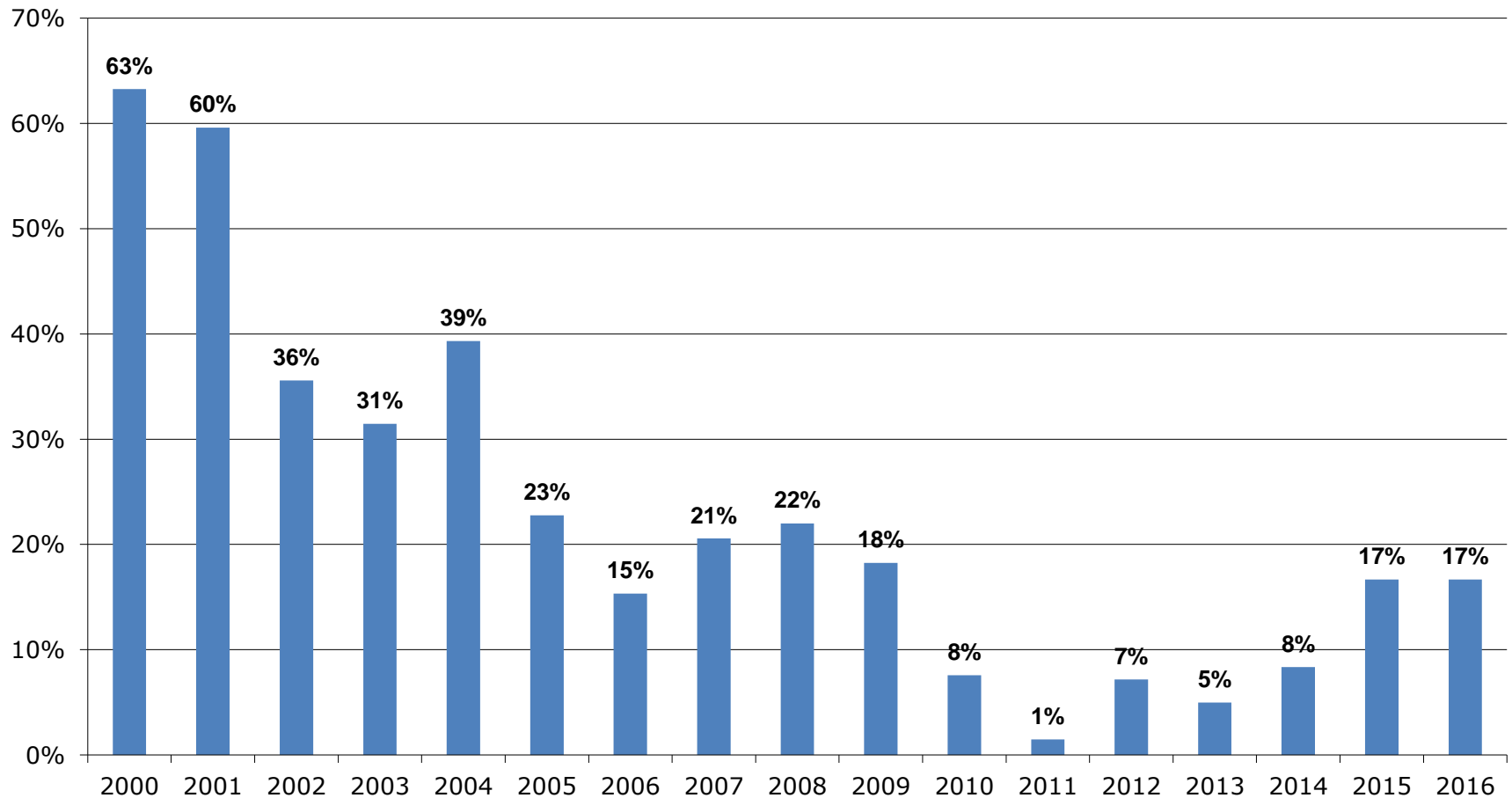
Standard	Number of certificates in 2016	Number of certificates in 2017	Change	Change in %
ISO 9001	1 105 937	1 058 504	-47 433	-4
ISO 14001	346 147	362 610	16 463	5
ISO 50001	20 216	22 870	2 654	13
ISO 27001	33 290	39 501	6 211	19
ISO 22000	32 139	32 722	583	2
ISO 13485	29 585	31 520	1 935	7
ISO 22301	3 853	4 281	428	11
ISO 20000-1	4 537	5 005	468	10
ISO 28000	356	494	138	39
ISO 39001	478	620	142	30
TOTAL	1 576 538	1 558 127	-18 411	-1

ISO14001 is increasing...

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%
Africa	0,7%	0,7%	0,7%	0,8%	0,9%	0,9%	0,9%	1,0%	0,9%
Central / South America	1,7%	2,9%	2,9%	3,1%	3,6%	3,4%	3,2%	3,0%	2,8%
North America	3,3%	2,6%	3,1%	3,3%	3,3%	2,8%	2,7%	2,4%	2,2%
Europe	40,0%	43,0%	41,6%	42,9%	42,3%	40,1%	37,5%	34,8%	31,1%
East Asia and Pacific	51,1%	47,9%	48,8%	46,9%	46,3%	49,2%	51,8%	54,7%	59,2%
Central and South Asia	2,0%	1,8%	1,9%	1,9%	2,4%	2,4%	2,4%	2,5%	2,5%
Middle East	1,2%	1,0%	1,0%	1,1%	1,3%	1,3%	1,4%	1,4%	1,3%

Effects of economic crisis

ISO 14001 - World annual growth (in %)





ISO14001

Top 10 countries for ISO 14001 certificates - 2016

1	China	137230
2	Japan	27372
3	Italy	26655
4	United Kingdom	16761
5	Spain	13717
6	Germany	9444
7	India	7725
8	France	6695
9	Romania	6075
10	United States of America	5582



**Which are the benefits related to
EMAS o ISO 14001 adoption?**

EMAS Evaluation Study (2014-2015)



Draft Interim Report **Supporting the Evaluation of the Implementation of EMAS**

INTERNAL DRAFT



Written by Daniel Weiss, adelphi; Fabio Iraldo, SSSUP; Tiberio Daddi, SSSUP; Maeve Smyth, adelphi
September – 2014 (Status: 26 September 2014)

Sample

	Sample	EMAS Population	%
Sample	467	3424	13.64%

Organisation size	Sample	EMAS Population	%
Micro (<10 employees)	42	722	5,82
Small and Medium (>10 employees < 250)	262	2056	12,74
Large (employees >250)	151	648	23,30

Emas maturity	Sample
Adoption before than 2002	26,27%
Between 2003 and 2005 (included)	17,28%
Between 2006 and 2008 (included)	21,89%
Between 2009 and 2011 (included)	19,35%
After 2011	15,21%



Drivers... (EMAS revision Evaluation study)

	Value	Standard deviation
To improve my organisation's environmental performance	4.24	0.81
To improve my organisation's public reputation	4.23	0.81
To contribute to a more sustainable world by reducing our environmental impact	4.20	0.88
Better management and guarantee of legal compliance	4.10	0.93
To improve organisational and managerial capabilities in the environmental area	3.93	0.90
To demonstrate legal compliance status to the public	3.89	1.05
To have a uniform environmental management standard that is recognized across the EU (i.e. more visible than national or local standards, easier to meet EU-harmonised environmental requirements)	3.78	1.16
To achieve better risk management and environmental liability prevention	3.73	1.13
To improve relations with the local community	3.50	1.04
To improve the quality of products/services offered to the market	3.05	1.33
To gain benefits from regulatory relief or other policy measures (e.g. tax breaks, less frequent inspections by authorities)	2.99	1.35
To keep up with main competitors and/or with the other members of trade associations to which my organisation belongs	2.91	1.41
To increase employee satisfaction	2.85	1.13
To increase my organisation's chances of gaining access to or obtaining competitive advantage in public procurement procedures	2.84	1.40
To make environmental management practices consistent at production sites worldwide through EMAS Global (incl. legal compliance check; reporting)	2.84	1.38
To increase my organisation's competitiveness on the export market (e.g. in customer-supplier relationships)	2.75	1.43
To improve relations with suppliers	2.73	1.17
To satisfy a request from customers/clients	2.58	1.39
To satisfy a request from trade associations	2.12	1.09
To satisfy a request from NGOs	2.11	1.10



Barriers

Barriers to implement EMAS	Value	Standard deviation
<i>Lack of EMAS recognition from the market</i>	3.58	1.26
<i>Lack of EMAS recognition by public institutions (including regulatory relief or other measures such as tax breaks)</i>	3.53	1.30
<i>Lack of external incentives</i>	3.46	1.28
<i>Lack of EMAS recognition by stakeholders and customers</i>	3.45	1.28
<i>Cost of environmental verifier</i>	3.28	1.15
<i>Costs of implementation (including external consultants)</i>	3.23	1.16
<i>Lack of EMAS recognition at the international level (outside the EU)</i>	3.13	1.33
<i>Costs of maintaining registration over time</i>	2.99	1.20
<i>Lack of technical and information support about EMAS from public authorities</i>	2.98	1.27
<i>Difficulties in involving, motivating or obtaining the commitment of personnel</i>	2.97	1.14
<i>Difficulties in achieving continuous improvement of environmental performance</i>	2.92	1.19
<i>Difficulties originating from the set-up of the EMAS scheme (e.g. definition of roles and responsibilities; internal audits; staff training)</i>	2.78	1.02
<i>My organisation did not experience any difficulties in implementing EMAS</i>	2.78	1.20
<i>Difficulties linked to the approach followed by the environmental verifier (e.g. verification of legal requirements, different interpretation of EMAS requirements by different environmental verifiers, lack of experience of verifier, etc.)</i>	2.64	1.13
<i>Cost of registration fee (to Competent Body)</i>	2.50	1.13
<i>Difficulties in producing the Environmental Statement</i>	2.44	1.07
<i>Difficulties in achieving or maintaining legal compliance</i>	2.43	1.11



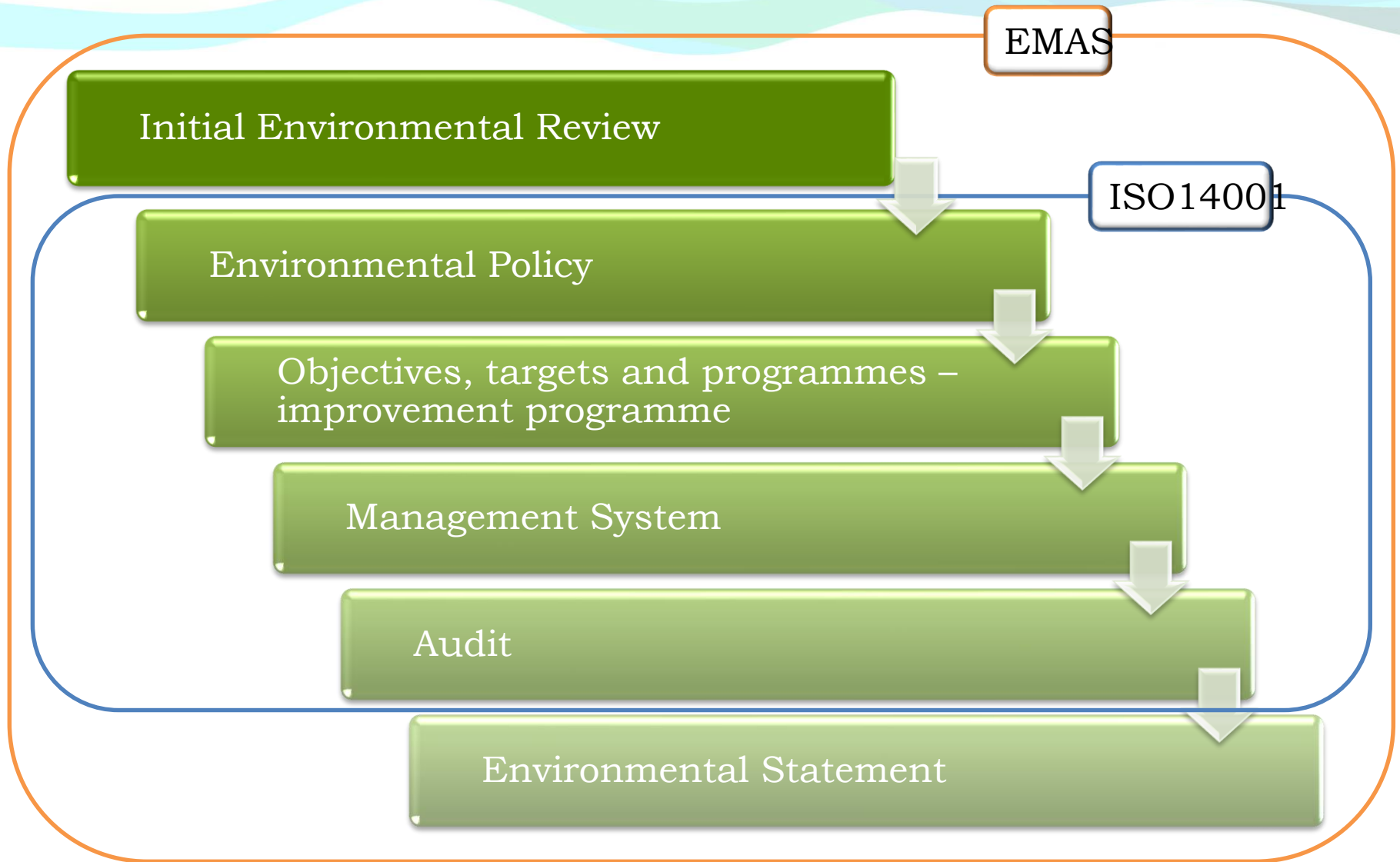
Benefit (EMAS revision Evaluation study)

	Value	Standard deviation
Improved legislative compliance	3.83	1.00
Reduced risk of incurring environmental sanctions through improved compliance	3.54	1.15
Better identification of overall corporate responsibilities (e.g. clear identification of roles and responsibilities for managing environmental requirements)	3.51	0.98
Fewer environmental accidents	3.29	1.24
Cost savings through reuse, recycling, or decrease in resource or energy use	3.25	1.20
Improved relations with public stakeholders and the local community	3.15	1.06
Increased employee involvement and satisfaction	3.09	1.05
Consistent environmental management practices (incl. legal compliance check; reporting) worldwide through EMAS Global	3.07	1.20
Added value from having a uniform environmental management standard that is recognized across the EU (i.e. more visible than national or local standards, meets environmental requirements across EU)	3.01	1.22
Meeting environmental reporting obligations (based on national/EU legislation) through EMAS	2.96	1.15
Increased customer satisfaction	2.91	1.19
Improved relations with private stakeholders (suppliers, competitors, trade associations, markets, etc.)	2.82	1.08
Increased marketing opportunities	2.77	1.16
Improvement of the quality of products/services offered on the market	2.73	1.22
Improved competitive advantage on the domestic market	2.62	1.15
Obtaining administrative simplifications and regulatory relief (e.g. longer duration of permits, less frequent environmental inspections by authorities)	2.58	1.30
Improved competitive advantage on the European market	2.58	1.18
Improved rating from financial and insurance institutions	2.45	1.13
Increased shareholder value	2.36	1.12
My organisation has not experienced any benefits from EMAS	2.28	1.15



EMS: Operational steps

EMSs: scheme



1. Initial Environmental Review

→ ‘**Environmental review**’ means an initial comprehensive analysis of *environmental aspects*, *environmental impacts* and environmental performance related to an organisation’s activities, products and services.

Environmental aspect: an element of an organisation’s activities, products or services that has or can have an impact on the environment;

‘**direct** environmental aspect’: an environmental aspect *associated with activities, products and services* of the organisation itself over which it has direct management control;

‘**indirect** environmental aspect’: an environmental aspect which can *result from the interaction* of an organisation with third parties and which can to a reasonable degree be influenced by an organisation

Environmental impact: any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation’s activities, products or services

1. Initial Environmental Review

The main objectives of an initial environmental analysis are:

- to identify, assess and document the most important environmental aspects connected with the activities carried out;
- to study the interaction between these *aspects* and the technical and management organization of the *activities* carried out by the organization within its operations;
- to verify compliance with the legislative and regulatory requirements;

1. Initial Environmental Review

The **basic activities** making up the initial analysis must, above all, be able to:

- identify the legal or regulatory requirements needed to fulfill and assess compliance with them;
- identify and analyse all the environmental aspects connected to the activity carried out and to the products and services provided;
- assess these aspects and select the most significant ones;
- keep a record of the environmental aspects;
- analyse the processes and procedures for existing environmental management and assess the lessons learnt from the analysis of any environmental accidents that have occurred.

In order to set up this activity correctly, the organization should conduct an **initial detailed review** of:

- the production processes and/or the services it carries out,
- the raw and semi-finished materials, and the services it uses,
- the products and services it provides,
- with the aim of identifying their *effects (actual or potential) on the environment*.

Legal Compliance

Box 3.1 Guidelines for checking legislative conformity with all environmental aspects

- Is the organization aware of all the laws and regulations connected to the production activities concerning the aspect under examination?
- Has the organization identified the relevant legislative provisions, fulfilled all the administrative and authorization requirements?
- Has the organization initiated and completed the authorization procedures correctly?
- Has the organization obtained the relevant authorizations and received certifications?
- Has the organization respected all the methods and timeframes to renew the authorizations?
- Is the organization in compliance with the provisions and any regulatory limitations? Are there any disputes or on-going cases affecting relations with the competent authorities?
- Has the organization initiated ways and means of collecting, updating, recording and archiving references to legislation and relevant regulations?

Source: Daddi Iraldo Testa 2015- The environmental certification of organization - Routledge

The identification phase and analysis of environmental aspects

The Regulation stipulates that *‘an organization must consider all aspects of its activities, products and services and decide which aspects have a greater impact on the environment on the basis of the criteria it has set itself’*.

The Regulation uses the concept of *management control* as a means of distinguishing between direct and indirect environmental aspects.

Direct environmental aspects are defined as those aspects *‘under (full) management control of the organization’* and indirect environmental aspects as those over which the organization *‘may only have partial management control’*.

Examples of environmental direct aspects

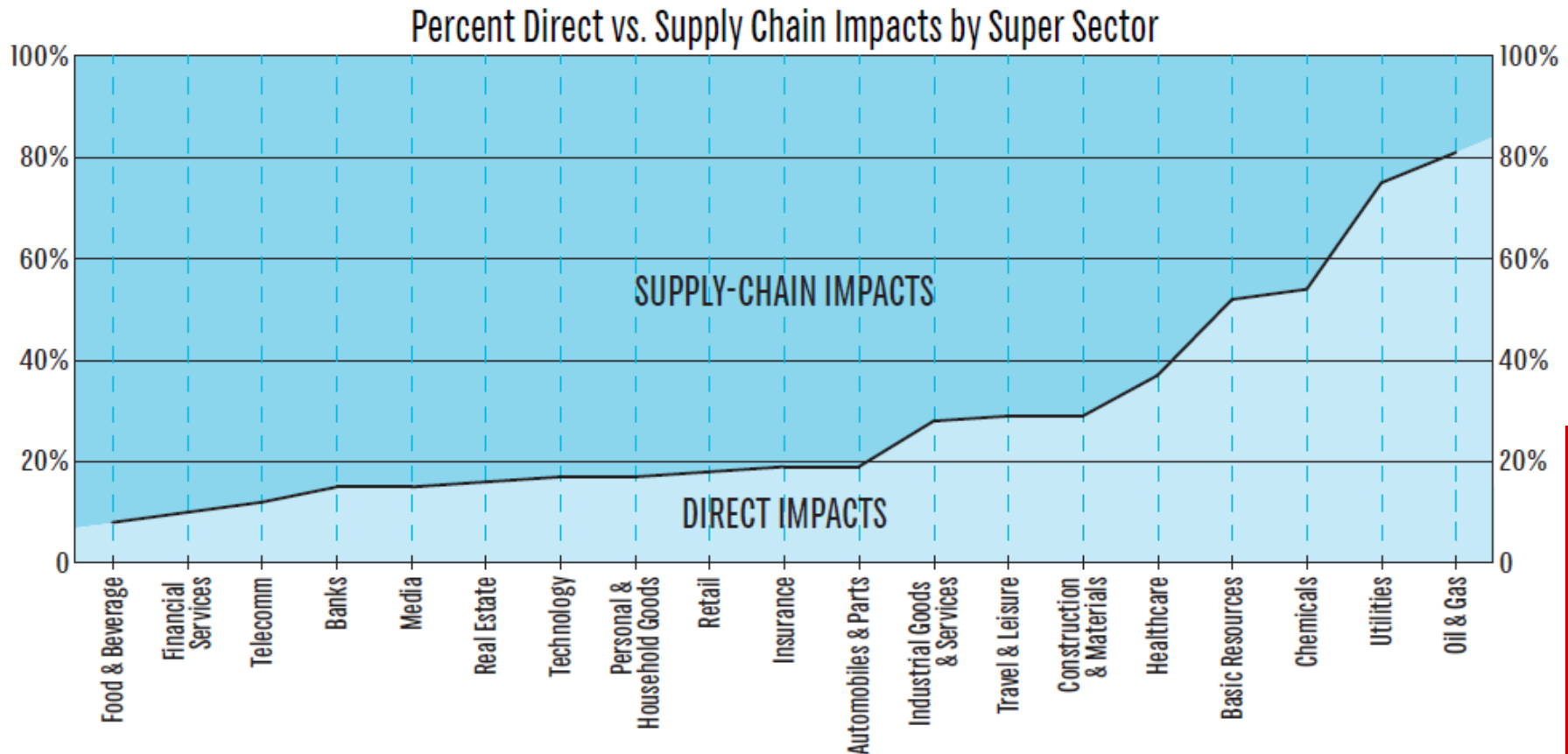
- a) Air emissions
- b) Water emissions
- c) Waste
- d) Use of natural resources and raw materials
- e) Local issues (noise, vibration, odours)
- f) Land use
- g) Air emissions related to transport
- h) Risks of environmental accidents and emergency situations

And of environmental indirect aspects

- a) Product life cycle related issues
- b) Capital investment
- c) Insurance services
- d) Administrative and planning decisions
- e) Environmental performance of contractors, subcontractors and suppliers
- f) Choice and composition of services, e.g. transport, catering, etc.

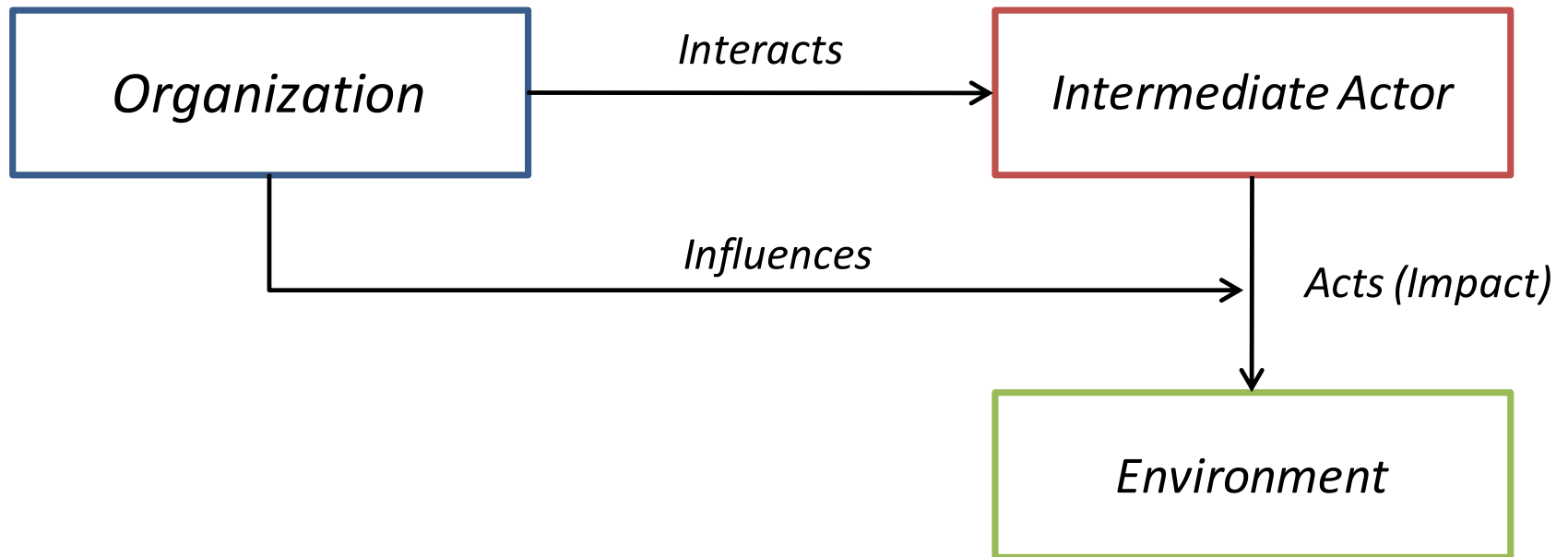


Why the focus on indirect environmental aspects



(fonte: State of Green Business, 2013)

A figure to clarify...



Identification and assessment process of the environmental aspects

The analysis must be carried out in consideration of the:

- a) *routine operating conditions* (with regard to normal business operations including, for example, ordinary and extraordinary maintenance planned for the production plant);
- b) *non-routine operating conditions* (including, for example, start-up conditions and shutdown of operations or production plants);
- c) *accidents, unforeseen situations or foreseeable emergencies* (in this case the initial review should assess the possible consequences and measures adopted to prevent them in conjunction with the probability that the event will take place);
- d) past, present and planned activities.

Assessment of environmental aspects and identification of the significant ones

Having identified and analysed all the environmental aspects related to the activity carried out, the organization must assess them in order to select the ones which are considered significant and merit special attention in structuring the EMS

The definition of the criteria for attributing significance to the environmental aspects is, therefore, left to the organization and represents an essential phase in the initial review.

But these criteria must be 'comprehensive, capable of independent checking, reproducible and made publicly available'.

Examples



Initial Environmental Review of a tannery certified ISO14001 and EMAS

**Significative environmental aspects
of a tannery**



2. Environmental Policy

The environmental policy:

defines the commitment which the management of the organization intends to adopt to protect the environment, states “the general objectives and principles for action” which will guide all its actions in managing environmental problems connected to its business practices.

The environmental policy must

- be viewed as an asset at the highest management level,**
- be coherent and integrated into the set of general principles and objectives which represent the organization’s values, and identity and inspire its decisional and management processes,**
- translate into specific objectives and concrete actions aimed at improving the management of environmental aspects and related performances.**
- be clearly stated in writing,**
- signed by the highest echelons of corporate management,**
- implemented, maintained and updated over time.**

2. Environmental Policy

The reference standards also require that the environmental policy is communicated to all personnel and made available to the public → not to be considered a purely formal act, but on the contrary, interpreted as an *unequivocal statement of the organization's commitment* to its employees and external stakeholders.

Mandatory contents:

- **compliance with the law and standards** of the organization
- commitment to **continual improvement**
- participation and involvement of **personnel**
- commitment to dialogue with **external parties**



2. Environmental Policy



UniCredit Environmental Policy

The cornerstone of our corporate mission is to generate value for UniCredit's customers and shareholders, and contribute to the development of the communities in which we live and work.

UniCredit is aware that, over the long run, economic development requires proper protection of nature and the ecosystems that are essential to human survival.

When we adopted the Global Compact Principles, we made a commitment to the environmental goals it sets forth: to support a precautionary approach to environmental challenges; to undertake initiatives that promote greater environmental responsibility; and to encourage the development and diffusion of environmentally friendly technologies.



2. Environmental Policy

Today, it is a central challenge for businesses to address climate change, conserve biodiversity, efficiently use natural resources and assure ample water supply. As a commercial bank, we acknowledge we can play key role addressing these issues, and will continue to work to facilitate sustainable development, encourage job creation and foster social inclusion.

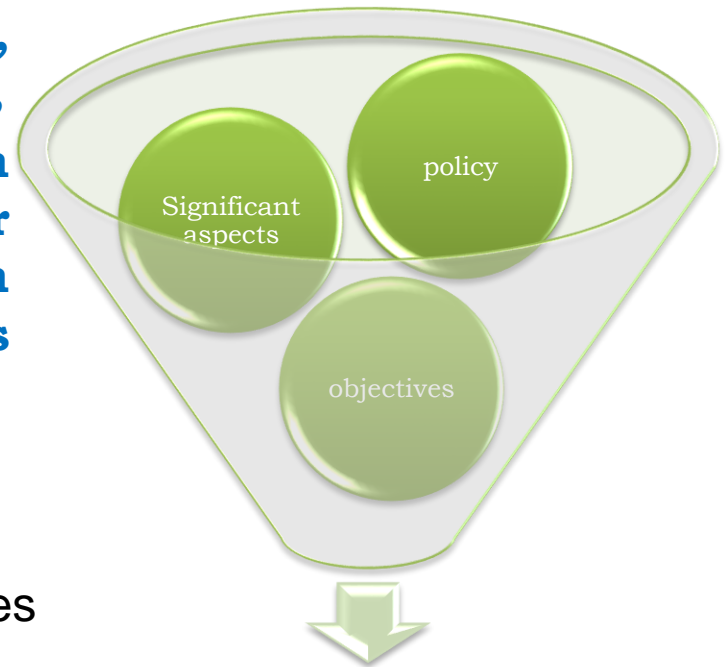
Our Environmental Management System is the framework through which we define and take action on our environmental commitment. As a financial institution, in addition to assuring our compliance with environmental regulations and our ongoing reduction of environmental impacts related to business operations, we are committed to transitioning to a more sustainable economic model through our lending and procurement practices.

In line with our corporate mission, we work to be fully engaged and transparent with institutions, associations and customers regarding our approach to economic development and the use of sustainable practices. The involvement of all our people through dedicated initiatives that raise awareness and promote individual responsibility is a key aspect of our commitment to the environment.

3. Objectives, targets and programmes

→ significant environmental aspects have been identified

- the commitment in conjunction with the environmental policy have been established to prevent, manage and monitor these aspects,
- the organization must then define specific objectives for improvement and plan appropriate actions accordingly.



General objectives

Specific objectives

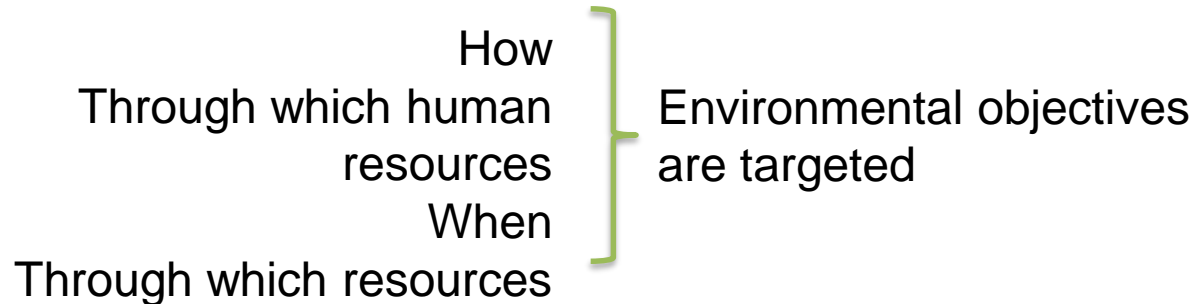
Commitments

Performance objectives
→ tailored

Consistency!

3. Objectives, targets and programmes

Environmental programme → description of the measures, responsibilities and means taken or envisaged to achieve environmental objectives and targets and the deadlines for achieving the environmental objectives and targets.



Environmental programme:

- ✓ **Reflects organisation's characteristics;**
- ✓ **Implements intervention priorities defined by initial review;**
- ✓ **Contributes to environmental policy pursue.**

3. Objectives, targets and programmes

Organisation should set up and maintain **documented objectives and targets**

Environmental objective: overall environmental goal, arising from the environmental policy, that an organisation sets itself to achieve, and which is quantified where practicable

- **Objectives** define the *final goal* to be achieved in the *long run*

Environmental target: a detailed performance requirement, arising from the environmental objectives, applicable to an organisation or parts hereof, and that needs to be set and met in order to achieve those objectives

- **Targets** define *intermediate goals*, which have to be quantified (and verifiable), in order to *achieve the objective*

New Environmental
Targets for 2016



3. Objectives, targets and programmes

Having defined the improvement objectives and identified the actions required to pursue them



the organization then develops the **environmental programme based on the model and summarized contents shown in the following table.**

Environmental Aspect	Objective	Target	Actions	Timeframe	Resources	Responsibilities

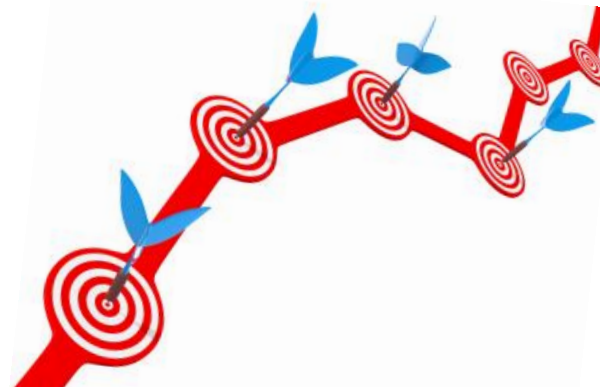
4. Management System

Why adopting an EMS?

- ✓ **Reaching and demonstrating good environmental performances;**
- ✓ **Guaranteeing legislative compliance.**

Environmental Management System (EMS) → The part of the overall management system that includes the organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy and managing the environmental aspects.

- ✓ **consistent with** the identification and assessment of the **environmental aspects**, the commitments outlined in the **Environmental Policy**, the **objectives and goals** set by the improvement programme as well as with the **regulations** which apply to the organization identified during the initial environmental analysis.



4. Management System

Design and implementation of an EMS do not always entail an organizational revolution, but merely a *rationalization and classification* of some of the processes that are already in place before it is introduced into the organization.

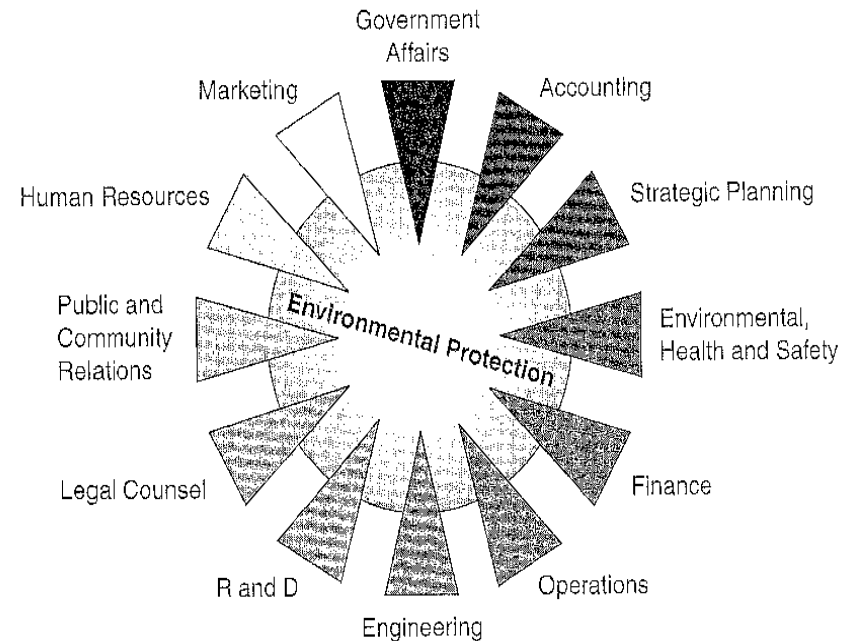
Still, some **elements** need to be reviewed in the definition process of the system. In particular, an organization must:

- adapt its organizational layout by defining (and giving an adequate description of) the “structure” of the environmental management system and the business functions involved by indicating the relevant tasks;
- involve personnel by finding suitable ways to raise awareness, train and increase competence in managing environmental aspects;
- define and implement effective work methods for the correct management of environmental aspects and a suitable response to emergencies;
- monitor its environmental performance, the functioning of the system and find effective ways to solve any discrepancies;
- define communication processes, both *top-down* and *bottom-up*, among the different company departments and towards interested external parties;
- document the system and record its performance.

Definition of roles and responsibilities

In order to give all the functions and human resources, all the references and coordinates to correctly carry out the activities in the field of environmental management, a precise and detailed definition must be given for:

- the roles of each figure in the organization must cover in the environmental management;
- the responsibilities attributed to those figures concerning environmental aspects;
- the duties and tasks assigned for the environmental management system;
- the work methods each person must employ to complete these tasks and duties.



Definition of roles and responsibilities

Box 3.9 Example of description of responsibilities for environmental management

Management Representative:

The Management Representative is responsible for:

- developing the Environmental Policy;
- identifying the Management System Supervisor;
- making means and resources available for the functioning of the Management System;
- approving the management system procedures;
- calling for and performing the Management Review;
- approving the improvement programmes and developing communication policies;
- verifying the planning of training activities.

The Environmental Management System Manager

The Environmental Management System Manager designs, carries out and maintains the management system through:

- the management (drafting, verification, archiving, etc.) of the documentation (procedures, operational instructions and registration documents) of all the management systems;
- the identification of the legal provisions and all the other requirements applicable to the company's activities and the periodic check on compliance with them;
- the identification and assessment of the environmental aspects associated with the company's activities and the processes and drafting of the initial environment review;
- the development of the report on the status of the management system which acts as the basis for conducting the Review Meeting;
- the update and development of the Improvement Programmes and the periodic check on their progress;
- collaboration in the planning and implementation of activities regarding training and instruction of personnel;
- the monitoring and measurement of environmental performances and activities affecting them
- the planning and coordination of audits;
- the management of breaches of the management system.

(...)

Raising awareness, training and participation

An effective EMS can be achieved only if all the personnel are adequately informed and trained.

These three areas of learning and personal development are complementary:

***Education* is essential for creating the organizational conditions needed to assimilate the culture of prevention and is aimed at transferring skills that are not tied to one specific field of activity (*know who you are*).**

***Information* is a simplified form of classroom training: it transfers contents which can be assimilated even if it does not develop advanced forms of interaction (*know-how*).**

***Practical training* is a specific educational activity fulfilling the need to learn the correct practical use of tools and procedures (*how to do*).**

Above all, in order to ensure that all personnel involved in activities that may cause a significant environmental impact reach an adequate level of awareness, the organization may decide to train its employees on:

- the objectives and content of the ISO 14001 standard;
- the principles and commitments defined in the environmental policy;
- the organization's environmental programme;
- the direct and indirect environmental aspects identified by the environmental review;
- the responsibilities, tasks and duties connected to environmental management (including emergency management);
- the technical and management characteristics of the EMS;
- the measurement criteria and systematic checks on environmental performances;

Raising awareness, training and participation

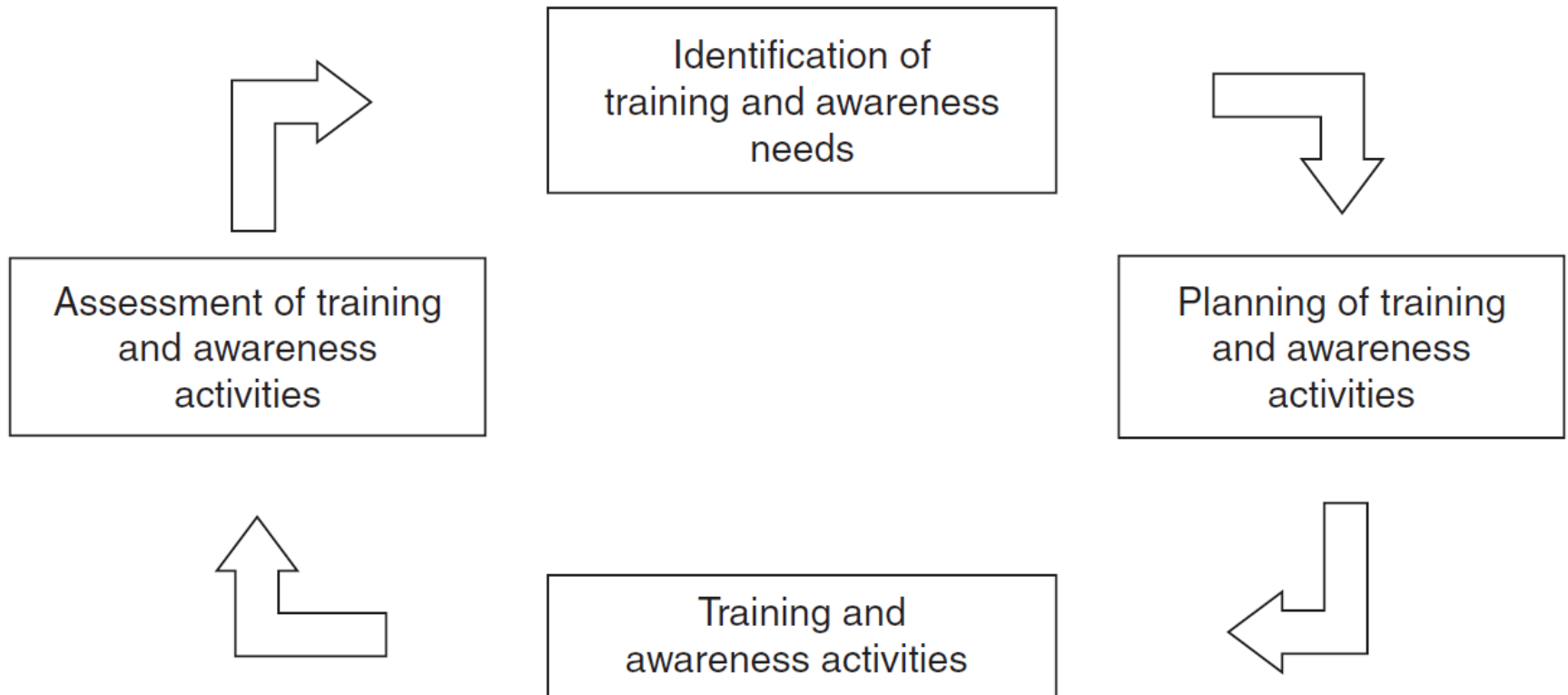


Figure 3.1 Diagram of training activities (source: Decision of European Commission 2013/131/EU).

Raising awareness, training and participation

Table 3.6 Example of a form for planning/recording of training activities

[illegible]

Defining and implementing the correct work methods for managing environmental aspects and emergency situations

It is one of the most important requirements of the environmental management system

As a result, the environmental review results must be used as a starting point for identifying the operational activities with which the most significant aspects (direct and indirect) are associated and defining the most suitable actions and behavior in order to ensure that these operations are carried out with minimum impact on the environment.

Defining and implementing the correct work methods for managing environmental aspects and emergency situations

Some of the key procedures of operational control (often defined as 'operational instructions') may address the following areas:

- management of equipment, machines and plants;**
- management of dangerous substances;**
- maintenance, checks and controls (e.g. periodic checks on the efficiency of abatement plants of pollutants released into the atmosphere);**
- design of new products and organization of work;**
- management of wastes;**
- management of treatment operations for waste water;**
- management of contractors;**
- qualification of suppliers and contractors;**
- management of other significant environmental aspects.**

**Example: environmental legal compliance
management procedure of a tannery certified
ISO14001 and EMAS**



Example: waste management procedure of a tannery certified ISO14001 and EMAS



Defining and implementing the correct work methods for managing environmental aspects and emergency situations

The procedures for operational control as defined by the organization should be:

- used for all activities requiring a clear definition of responsibilities, tasks and duties;**
- properly distributed and made available where used;**
- known by the personnel involved;**
- periodically checked and updated;**
- documented systematically.**

Example: oil spills and chemicals handling instructions of a tannery certified ISO14001 and EMAS



Performance, monitoring and improvement measurement

The ISO 14001 standard and the EMAS Regulation indicate that the organization should establish and maintain documented procedures for regularly monitoring and measuring the key characteristics of its activities and operations that may have a significant impact on the environment

We can, therefore, pinpoint two elements of the monitoring system, in addition to the audit, which the organization must implement:

- ‘management’ monitoring**
- ‘performance’ monitoring**

Performance indicators

OPI: Operational Performance Indicators

ECI: Environmental Conditions Indicators

MPI: Management Performance Indicators

The communication process in the environmental management system

The organization's communication flow on the environment must be directed both internally and externally. The ISO 14001 standard and the EMAS Regulation stipulates that the organization, with regard to its environmental aspects and the EMS, should:

- a) guarantee internal communication at different levels and functions of the organization;**
- b) receive, document and respond to any request from interested external parties.**

Documenting the system and recording its performance: maintaining and controlling documentation

<i>Elements of the EMS management system</i>	<i>Examples of management documents</i>	<i>Examples of registration documents</i>
<i>4.1 General requirements</i>		
<i>4.2 Environmental policy</i>	<i>Environmental Policy</i>	
<i>4.3 Planning</i>	<i>P01 Identification and assessment of direct and indirect environmental aspects</i>	
	<i>IER Initial Environmental Review document</i>	
	<i>P02 Management of legal requirements</i>	<i>REG01 Register of legal requirements and relevant compliances</i>
	<i>Programme for environmental improvement</i>	

Documenting the system and recording its performance: maintaining and controlling documentation

4.4 Implementation and activities

P03 Management of human resources, information and training

P04 Management of communications

P05 Management of system documentation

P06 Management and qualification of contractors

P07 Management of emergencies

OI01 Management of environmental documents for waste

OI02 Control of air emissions

OI03 Control of transport of goods/waste in ADR

OI04 Management of dangerous substances

REG02 Information, classroom training and practical training plan

REG03 Communications registration form

REG04 List of system documentation

REG05 Questionnaire for environmental qualification of suppliers/contractors

REG06 Register of control results

REG07 Check-list of controls on carriers

REG08 Register of dangerous substances

Documenting the system and recording its performance: maintaining and controlling documentation

<i>Elements of the EMS management system</i>	<i>Examples of management documents</i>	<i>Examples of registration documents</i>
<i>4.5 Controls and corrective actions</i>	<i>P08 Management of performance and monitoring measurements</i>	<i>REG09 Register of monitoring and measurements</i>
	<i>P09 Analysis of NC and consequent CA and PA</i>	<i>REG10 Register of NC, CA and PA</i>
	<i>P10 Internal audit</i>	<i>REG11 Audit report</i>
<i>4.6 Management review</i>	<i>P10 Management review and planning</i>	<i>REG12 Review minutes</i>

5. Audit

One of the fundamental activities of the “Check” phase of the Deming cycle → internal audit.

After the implementation of the EMS, it will be necessary to **assess** its **efficiency and effectiveness** in *guaranteeing the expected performance* (both management and environmental) and its *ability to achieve the objectives* laid down in the environmental programme by applying what is defined in the system.



‘Internal(*) Environmental audit’ → a *systematic, documented, periodic and objective evaluation of the environmental performance of an organisation, management system and processes designed to protect the environment.*

5. Audit

The systematic auditing activity has been instrumental in creating a trend in performance improvement enabling all organizations to exploit the benefits resulting from this activity in terms of:

- the identification of possible areas for improvement and necessary corrective actions;
- the availability of a complete, adequate, updated information source useful to Management in the decisional process and assessment of the organization's performance;
- facilitating the comparison and distribution of information within the company;
- the increase in the level of involvement, participation and cultural growth of all personnel;
- the availability of a support tool for managing relations with external contacts (controlling authorities, shareholders, financiers, insurers, customers, suppliers, public opinion, etc.).

✓ *Legal compliance!*

→ Reference standard: ISO 19011



5. Audit

Auditor principles according to the ISO 19011 standard

Ethical conduct: is the basis of the competences of anyone conducting an audit characterized by such qualities as *trust, integrity, confidentiality and discretion*.

Impartial presentation: obligation to report the audit results *faithfully and accurately*.

Adequate Professionalism: to ensure that the audit is effective and provides indications enabling the organization to pursue continual improvements in its management system, *the auditors must possess the necessary professional competences*.

Independence: the audit must be conducted by independent parties, that is, must demonstrate that the auditors are independent of the activities they audit and exempt of *conflict of interest*.

Evidence based approach: the audit results are based on objective and verifiable findings. They can be gathered through document checks, interviews and observations.

5. Audit

ISO 14001 standard and EMAS require that the organization establishes and maintains procedures for *periodically conducting audits* whilst taking into account the results of previous audits and the environmental importance of the activity to be audited.

Procedures → define the ways to:

- **train internal auditors and/or select external auditors,**
- **set up a team of auditors,**
- **plan, program and conduct the audit,**
- **report and use the results for the EMS review by Management.**



5. Audit

Auditing activities must also be adequately prepared and correctly planned by identifying the objectives and the scope of each audit (or **audit cycle**).

EMAS → an audit cycle shall be completed at intervals of *three years* or every four if the derogation provided for in Art. 7 of the Regulation is applied to small organizations with less significant environmental impacts.

The audit cycle consists of a period in which all the areas/activities/elements of an organization are subjected to an audit.

The organization, in fixing the schedule for the audits best adapted to its characteristics, must consider:

- the *nature, size and complexity* of the activities
- the *significance* of the environmental impacts associated
- the *importance and urgency* of the problems identified in previous audits
- the *previous environmental problems*.

5. Audit

Year:

Subject of audit	Reason for audit	Audit team	Personnel involved	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Paragraphs 4.2, 4.3.1	Verification of the methods for identifying and assessing the environmental aspects and content and distribution of the Environmental Policy	Auditor A	EMSM		X										
Paragraphs 4.3.2 and 4.5.2 of the ISO 14001 standard	Completeness of the identification of legal requirements and search for evidence of application thereof, execution of periodic verification by the organization.	Auditor A Auditor B	EMSM Management				X								
Paragraphs 4.4.6 and 4.5.1	Verification of production department, warehouse and purification plant. Verification of monitoring and measurement activities.	Auditor B	EMSM Head of Production			X						X			
ED Date	Etc...						Signature Department Manager								



5. Audit

The execution phase

1.Planning and understanding the management systems → definition of the work calendar, collection and analysis of information about the relevant activity and the necessary documentation (e.g. policy and programme, management procedures, applicable legislation, general documentation – organizational charts, process sheets, layout) with particular reference to the results of previous audits. It enables schedules and resources to be well organized.

2.Collection and assessment of findings → acquisition of all the elements necessary for the collection of evidence needed to evaluate the EMS. The findings of the audit form the basis of the documents with which the team of auditors establish the conformity of the existing activities *with the applicable laws, regulations, corporate procedures and any management standards*, as well as the degree of fulfillment of the objectives fixed in the policy and improvement programme. Three main methods of voluntary evidence can be identified for the collection of evidence:

1. interviews with personnel,
2. document analysis, and
3. direct observations on-site (inspections of working conditions and of the plants)

5. Audit

3. Preparation of report and follow up → The audit results are summarized in a final report with an *evaluation of the efficiency and effectiveness* of the management. The report is presented to the Management of the organization, usually during the a final meeting. Any adjustment/improvement plans suggested by the team of auditors on the basis of the audit results may be resolved immediately, depending on the type and degree of urgency, through suitable corrective actions.

“Follow up” phase: findings are taken on board and resolved; it allows the system to bring about improvements with regard to the indications laid out by the auditor during the audit.

Example of structure of audit plan

5. Audit

AUDIT PLAN

Organization:

Objective of Audit:

Date of Audit:

Members of Audit Team

Team Leader:

Auditor:

Agenda:

1° Meeting (1/2 day)

<i>Time</i>	<i>Activity</i>	<i>Corporate functions to be involved</i>
9:00 – 9.30	Opening meeting	EMSM ¹ – Head of Prod., Management
9:30 -10:30	Inspection of production plant and area outside the works	EMSM – Head of Prod.
10:30-11:45	Analysis of documentation: Initial Environmental Analysis, User Guide	EMSM
11:45-13:00	Analysis of documentation and compliance with management of emergencies, firefighting	EMSM, Firefighting team leader, Maintenance Manager
13:00	<i>Team briefing</i>	

2° Meeting (1/2 day)

<i>Time</i>	<i>Activity</i>	<i>Corporate functions to be involved</i>
9:00 – 9:15	Opening meeting	EMSM – Head of Prod.
9:15 -10:00	Choosing and managing suppliers and contractors	EMSM – Head of Procurement
10:00-11:00	Objectives for monitoring, measurement and improvement	EMSM – Management Representative
11:00-12:00	Management of regulatory conformity and spot checks of applicable compliance	EMSM – Head of Prod.

5. Audit

Example of structure of audit report

Year: _____ Audit n°: _____				
Carried out on: _____ Type di audit: <input type="checkbox"/> ordinary <input type="checkbox"/> extraordinary				
Head of Audit Team:				
Members of Audit Team:				
Areas/functions to be audited:				
Area	Area Supervisor	Other figures involved	Date	Time
Objective of audit:				
Description of process and audit criteria:				
Findings and NC/observations found:				
Audit Conclusions:				

The concept of Non conformity

The term '**Non-Conformity**' means the failure to fulfil one or more of the requirements defined by the organization through its management system, in accordance with the reference standards (ISO 14001 or EMAS), legislation or applicable regulations which adversely affect its environmental performance.

Take, for example, failure by workers to respect a given provision (e.g. incorrect management of a temporary waste deposit), failure to reach an objective, incorrect application of a legal provision (e.g. failure to carry out a periodic check on the quality of emissions) or the failure to meet a specific regulation requirement (e.g. not identifying external documentation).

The organization could, therefore, introduce a procedure that includes an operational procedure similar to the one below:

- notification of the NC through appropriate forms to be filled in by the workers in charge of carrying out the process;
- registration of the NC by the Environmental Manager;
- analysis of the causes of the NC, if necessary, in collaboration with other Functions within the organization affected by the same NC;
- handling of the NC in accordance with the methods agreed with the Managers of the Functions involved and with the contribution of the person who issued the alert;
- introduction of the corrective or preventive action (if necessary) to avoid repetition of the NC;
- verification of the outcome of the action implemented (if negative, the procedure must be repeated).

6. Management review

Management review → In line with continual improvement, the Review is aimed at identifying which **areas** of the management system present **margins for improvement**. Once the critical points have been narrowed down, the organization's Management can **redefine the objectives** and/or the components of the EMS in order to pursue any opportunities identified for improvement.

SWIM and Horizon 2020 Support Mechanism

Working for a Sustainable Mediterranean, Caring for our Future

Thank you!

Tiberio Daddi
Tiberio.daddi@santannapisa.it

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