

“Capacity Building and Strengthening Institutional Arrangement”

Workshop: Sustainable Development

**Environmental Management Systems for
Sustainable Development**

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1. Introduction

During the last years, at national and local level the adoption of the principles of sustainable development is one of the first priority of the Public Authorities, in order to adopt programmes, measures and actions to protect the environment and natural resources

In this context, industries and productive sectors have the necessity to modify their productive systems with the aims to improve the environmental sustainability, the environmental performance of their plants and to prevent and reduce environmental pollution

1. Introduction

In order to improve environmental performances and the sustainable development management, there are different tools available for the organizations, such as for example:

- Environmental Impact Assessment

- Environmental Strategic Assessment

- Environmental Management Systems (EMS)**

- G.I.S.

- Costs and Benefits Analysis

- Action Plan Local Agenda 21

- Environmental Accountability

- Sustainability Indicators

- Environmental Reporting

- Green Public Procurement

In the next slides will be presented the Environmental Management Systems (EMS) as a tool for the sustainable development management

2. Environmental Management Systems (EMS) for Sustainable Development

“What is an EMS ? : introductive aspects”

- EMS is a management system that allows an organization to systematically manage its environmental and health safety matters.
- EMS is organized in a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency
- EMS is a tool to promote the commitments of the organizations to respect the environmental laws and to prevent the pollution
- EMS is based on a voluntary adhesion of the organizations

According the ISO14001 the EMS is ‘The part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy’

2. Environmental Management Systems (EMS) for Sustainable Development

An EMS is a continual cycle of planning, implementing, reviewing and improving the processes and actions that an organization undertakes to meet its business and environmental goals.



2. Environmental Management Systems (EMS) for Sustainable Development

“Why Develop an EMS?”

- To improve environmental performance
- To improve the environmental sustainability
- To enhance compliance with environmental regulations
- To Prevent pollution and conserve natural resources
- To Reduce/mitigate environmental risks
- To attract new customers and markets
- To Increase efficiency organization
- To reduce organization's costs
- To enhance organization's image with public, regulators, lenders, investors
- To achieve/improve employee awareness of environmental issues and responsibilities

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EMS Cost and Benefits

POTENTIAL COSTS

Internal

- Staff (manager) time
- Other employee time
- Audit's costs
- Instruments to implement the environmental improvement plan

External

- Potential consulting assistance
- Outside training of personnel

POTENTIAL BENEFITS

- Improved environmental performance
- Enhanced compliance
- Prevention of pollution/resource conservation
- New customers / markets
- Increased efficiency / reduced costs
- Enhanced employee morale
- Enhanced image with public, regulators, lenders, investors
- Employee awareness of environmental issues and responsibilities

2. Environmental Management Systems (EMS) for Sustainable Development

The different phases for the development of an EMS

An Environmental Management Systems is organized in 6 phases, that are always repeated during all the process and are finalised to improve the environmental performances and of the continual improvement of the organization

The 6 phases are:

- 1) The Initial Environmental Analysis
- 2) The Environmental Policy
- 3) The Planning
- 4) The Implementation
- 5) Checking and corrective actions
- 6) Management review

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1) The Initial Environmental Analysis

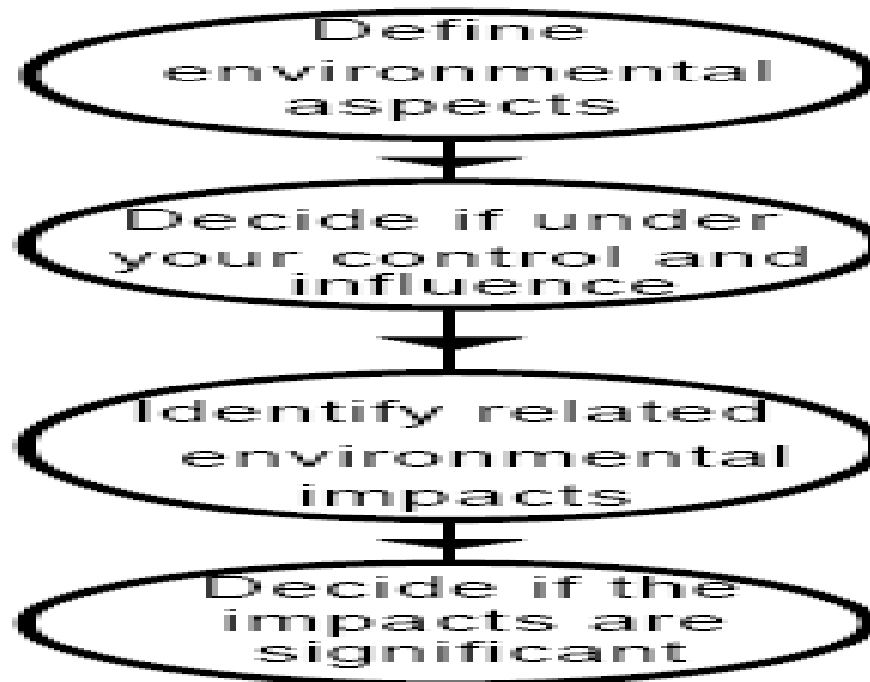
The environmental analyse is a preliminary activity to make a 'photography' of the state of art of the environmental problems of the organization and to evaluate the potential impacts and the environmental performances

By means of the environmental analysis it's possible to:

- a) Verify the respect of the environmental regulations
- b) Evaluate the environmental aspects of the site in normal working condition, in emergency, for past, present and future activities
- c) Select the most important environmental issues
- d) Analysis of the all organization's procedures, included the procedures about the environmental training and information of the workers

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1) The Initial Environmental Analysis



Once that have been identified the environmental aspects of the products, activities, and services of the organization, it's possible to determine which aspects could have significant impacts on the environment.

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2) The Environmental Policy

An environmental policy is the top management's declaration of its commitments for the protection of the environment. The environmental policy is the most important document of an EMS, because define the environmental strategies and targets of an organization.

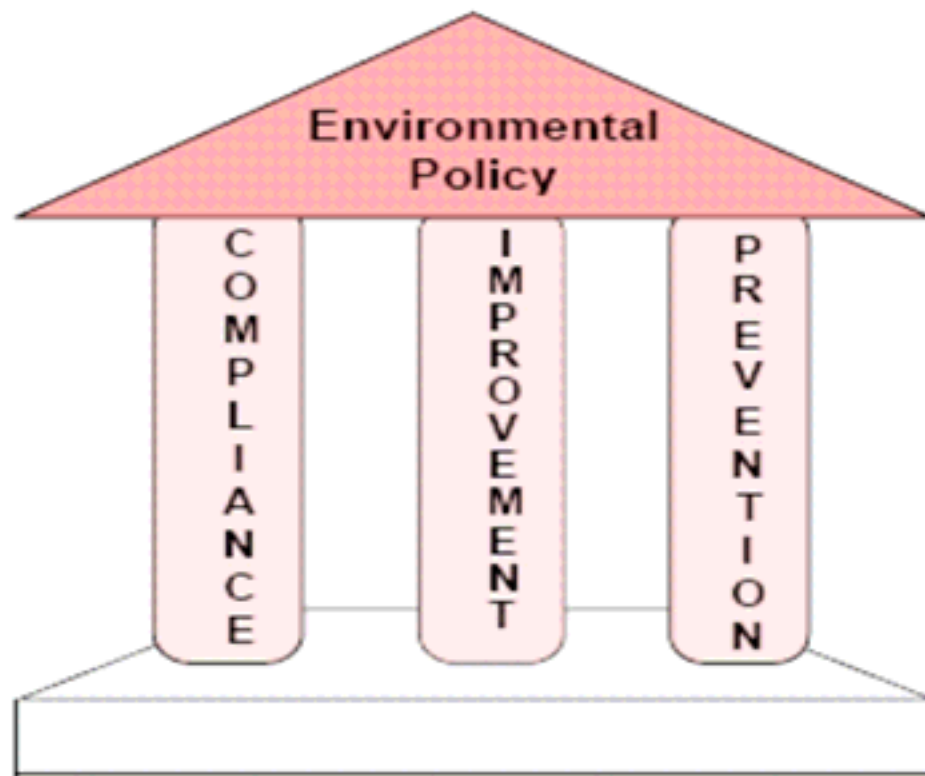
The Top Management has the duty to promote environmental awareness towards all the workers, to be sure that the employees understand the policy

The environmental policy is based on 3 main principles:

- The compliance of the environmental law
- The continual improvement of environmental performances
- The prevention

2. Environmental Management Systems (EMS) for Sustainable Development

2) The Environmental Policy of the organization



The 3 pillars of an environmental policy

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3) Planning

The implementation of the environmental policy is developed by means of the planning, that include:

- The identification of the environmental aspect of the organization's activities and assessment of the environmental impacts caused by these activities
- The identification of the regulation law and requirements
- The environmental objectives and target
- The environmental plans and the management programmes

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4) The Implementation

This phase is finalised to the reorganization of the environmental management of the organization, in order to prevent or mitigate all the activities that can have negative impacts on the environment

The implementation foresees the following steps:

- To define the responsibilities and roles of employees involved in the environmental policy implementation
- To train all the workers and managers involved in the environmental policy implementation
- To communicate inside and outside all the environmental commitments taken by the organization
- to check and control the different operative processes
- to plan the possible operative actions to minimizing the impacts of uncontrolled events (emergencies)

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4) The Implementation

Examples of activities and operations that might require operational controls:

- ☒ management / disposal of wastes
- ☒ approval of new chemicals
- ☒ storage & handling of raw materials and chemicals
- ☒ equipment servicing
- ☒ wastewater treatment
- ☒ operation of paint line
- ☒ operation of plating system
- ☒ management of contractors

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5) Checking and corrective actions

In order to achieve a real improvement, the EMS needs to develop procedures to measures and to evaluate the environmental performances.

This phase is based on the following actions:

- Monitoring and measurement
- Non-conformity* environmental management
- management of the preventive and corrective actions
- Record and evaluation of the objectives and targets achieved
- Audit of the EMS

Non-conformity*: system or action which doesn't meet the ESM criteria

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6) Management Review

An Environmental Management System for Sustainable Development has to be reviewed by the top management in order to verify the continual improvement of the environmental performances. This phase is based on the following activities :

- Review the environmental policy
- Review the achievement of the environmental objectives and targets
- Review the audit's results
- Review the correct implementation of procedures
- Review the general efficiency of the environmental management system

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Two kinds of professional figures should be involved in the management review process:

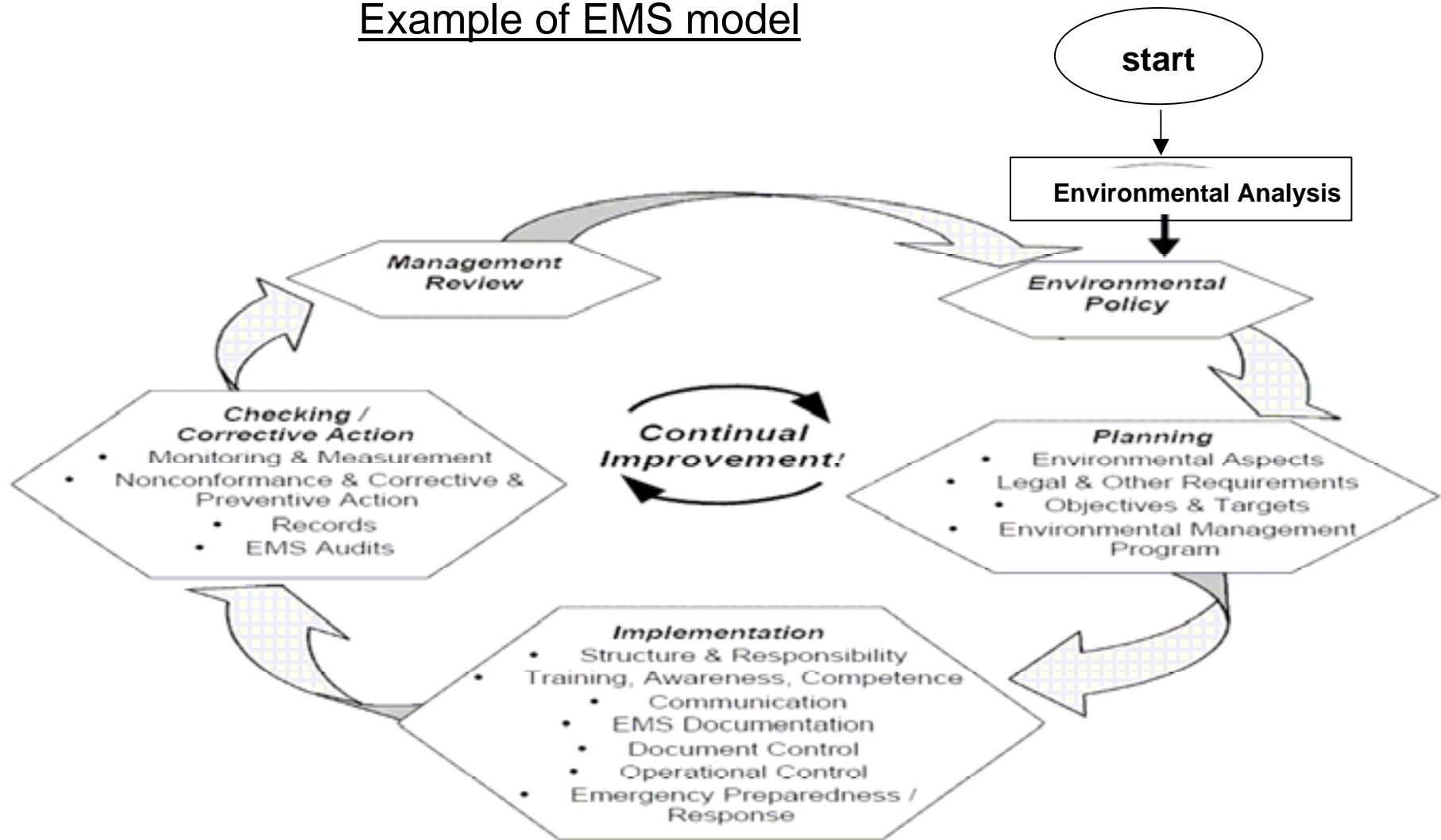
- people who have the right information / knowledge,
- people who can make decisions about the organization and its resources (top management).

Management reviews should assess how 'changing circumstances' might influence the suitability, effectiveness or adequacy of the EMS.

Changing circumstances might be **internal** to organization (such as new facilities, new raw materials, changes in products or services, new customers, etc.) or might be **external** factors (such as new laws, new scientific information or changes in adjacent land use)

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Example of EMS model



3. Conclusion

The Environmental Management System, based on a voluntary adhesion, is a useful tool that allow the organizations to improve their environmental performances and to respect the sustainable development principles.

In this first part of this module have been introduced the main concepts of the EMS; in the next parts of this issue will be presented the following other important aspects:

- European standard (EMAS) and the international standard (ISO)
- Other important aspect for the EMS
- The auditing phase for an EMS for sustainable development
- Possible checklist for an EMS Audit

4. References

www.apat.gov.it

<http://www.apat.gov.it/certificazioni/site/it-IT/>

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