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Integrated Environmental Management: Ecology, Safety and Quality

**ISO 14001: DESIGN AND IMPLEMENTATION
OF AN ENVIRONMENTAL MANAGEMENT
SYSTEM IN A PUBLIC ADMINISTRATION**

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1. Introduction

Following the Master in Integrated Environmental Management, held at the European School for Advanced Studies of IUSS (University Institute of Advanced Studies), University of Pavia, Pavia, Italy, I worked as a trainee at the consulting company Eco Auditing Ltd. Genoa, Italy. Eco Auditing is an Italian leading environmental consultancy to public and private institutions and it is specialised in environmental certifications, with expert consultants to assist in the design and implementation of environmental management systems applied to public bodies. Specifically, I was interested in the environmental certification of the municipality of Maratea, in the province of Potenza, in compliance with UNI EN ISO 14001.

2. Development of Environmental Management Systems to public bodies

The ISO 14001 has also been used for some years by public bodies as a useful tool to improve the management of their activities, products and services. Of all the requirements of the standard ISO 14001, the general ones, such as the definition of Environmental Policy (Section 4.2), Control of documentation (Section 4.4.5), the Audit of the Environmental Management System (EMS) (Section 4.5.4) and Education, awareness and competence (Section 4.4.2) staff, do not present particular problems for their applications to the production system. There are instead more difficult with the management of supplier and operational control (Section 4.4.6), due mainly to a bureaucratisation of the definition of relations between individuals competing to operate the same business, product or service. In particular, the quantitative parameters to take under control, analytically useful to define the environmental performance of the system, are difficult to find and integrate. The implementation of EMS at the town of Maratea occurred through the following phases.

3. Initial environmental review

The initial environmental review to determine the starting position of the organisation from the environment before developing the EMS. It is based on the verification of compliance with mandatory regulations and the identification of significant environmental aspects (critical), the examination of the various procedures and practices within the existing environmental analysis of accidents that have already occurred. At this stage, my work consisted of dealing with the figures in the community responsible for identifying, within the municipal structure of such activities, products and services within the direct or contracted for, contained environmental aspects to focus on the strengths and weaknesses and then address the shortcomings experienced organically. My actions have focused mainly on the figures identified by the organisation as responsible for the EMS, performing synergistically interviews and talks with them at the municipal offices (Administration, Accounting, Technical and Social Services) and the Secretariat. With the Technical Department, the part of territorial planning has been addressed and the documents relating to the General Development Plan, such as the preliminary geological studies to this document, the Building Program, and the cartography of the territory, have been found. A very important part of the activity of data collection was to find the various regulations of municipal services and the service contracts. Some of these contracts, including the management of potable and wastewaters and water purification service, the collection, transport and disposal service of municipal and differentiated waste, the care management and disposal of public green, and the school services such as meal delivery and transportation, were entrusted to third parties.

Particular attention was given to the verification of compliance with regulation relating to the conformity to standards of municipal buildings, the remediation of polluted sites, compliance with noise (noise zoning) and waste, and the site identification plan for aeriels. Of particular relevance at this time was the initial conversation with the deputy and the local direction for the first stage of comparison that should be the policy environment, to develop as a serious plan for future years on

'environment, a subject very dear to the local leadership of a country with a strong tourist vocation. It was quite obvious that the issue environment if properly managed and developed with an ISO 14001 certification, can be a real competitive advantage over direct competitors, other small tourist coasts of Campania and Calabria. Another very important aspect of the Initial Environmental Analysis phase was the training of the staff involved in the implementation of the EMS. This training saw the System Manager identified by the organization and his Assistant directly involved. Their roles, responsibilities and interactions between the municipal figures included in the EMS were addressed in the training course. From this meeting, various interesting aspects emerged on the difficulties of integrating the EMS into ordinary municipal activities.

4. The Manual of Environmental Management

The Manual of Environment Management (MEM) is the hub of all documentation of the EMS, including inside the Environmental Policy, Planning, Implementation and Operation, Controls and corrective actions and management review, all requirements of the Scheme Environmental Management under the various points, which emerge the various environmental management procedures (EMP), which we will see later in detail. The preparation of the MEM consists of a front office phase of data collection followed by a back-office data reprocessing and systemisation. This preparation step represents a very important phase of the implementation of the whole system, as within the Manual all documents forming the EMS, the procedures applicable, the roles and responsibilities of the various figures of the organisation, as well as the commitment that the administration assumed on the environment towards the community, are defined.

4.1 Introduction of the Manual of Environmental Management

As mentioned above, the MEM is divided into chapters corresponding to the various points under. In the introductory section, a small presentation of the municipality of Maratea has been developed based on data provided by the City through advertisements, brochures and various publications for

tourism and those that have been highlighted are the aims and scope of the Handbook, as well as applicable standards and guidelines.

5. Development of the requirements of the standard ISO 14001

5.1. Environmental Policy (Standard section 4.2)

The Environmental Policy is a document drawn up by the Mayor and intended for citizens where the commitment that the Municipality establishes and maintains for the continuous improvement of its environmental performance for all activities and functions affected by the EMS is manifest. Senior management of Maratea immediately took awareness of the enormous resources of its territory, its value and the importance of the commitment that the definition of the policy takes in respect of all citizens. The objective of the City and its differentiation from all others in the tourist towns of the southern Tyrrhenian coast aiming at a tourism niche, thanks to a continuous improvement of its environmental performance and, therefore, must be a primary adaptation to regulatory compliance and adherence to sustainable development. The meeting had with the deputy was clear his willingness to compare immediately with the Head of Environmental Management System for the proper start-up phase of the system given the inexperience of the figures in this type of municipal management.

5.2. Planning (Standard section 4.3)

The Planning phase, a fundamental step in the preparation and development of the EMS is normally composed of several points:

5.2.1. Environmental aspects (Standard section 4.3.1)

The organisation needs to start with people of all environmental aspects related to their activities and functions. From the interview with the Head of EMS, it was decided to immediately start to analyse what are the main activities and services within the municipal area affecting the environment

to proceed after the assessment of the significance of such impacts. It should be emphasised that in Maratea there are no industrial activities with substantial diffuse emissions into the atmosphere, or into the water body or with the production of hazardous substances and waste, as the economic activity is essentially based on tourism and commercial businesses, thus giving the municipal area a low environmental impact situation.

5.2.2. Legal and other requirements (Standard section 4.3.2)

The organisation is also required to identify all the various rules and voluntary rules in the environmental field and bring them up to date and available to its employees. I started to carry out this delicate stage in the back office initially through a search of all relevant national and regional binding and, subsequently, with the RGA meeting where it was made the verification of environmental legislation implemented by the City and the application of deadlines.

5.2.3. Objectives and targets (Standard section 4.3.3)

After carrying out the provisions in the preceding paragraphs, the management council should establish and maintain the environmental objectives and targets. Under my work, therefore, RGA has pledged to meet soon with senior management and the head of the engineering to identify those to be the most important goals and targets for improvement and to maintain regulatory compliance achieved.

5.2.4. Environmental Management Programs (Standard section 4.3.4)

This phase is closely linked to the previous point as the achievement of the objectives and targets is a function of the development and implementation of environmental programs. It was expected that the meeting of the local figures involved in EMS, as mentioned above, as soon as you have the formulation of an environmental program taking into account the restrictions imposed by the municipal budget.

5.3. Implementation and operation (Standard section 4.4)

After the initial analysis and preparation of the system now follows the time of commissioning of EMS, which is also divided into various points.

5.3.1. Structure and responsibility (Standard section 4.4.1)

The definition of roles, responsibilities and authority of the EMS was developed after a meeting held with senior management, through the appointment of RGA, and after a careful examination of the organisational chart and job description in town to bring some of the public offices with the roles envisaged in the Environmental Management System.

5.3.2. Training, awareness and skills (Standard section 4.4.2)

As mentioned above, I have been training the system manager and his assistant to explain the meaning of the rule and the main points, so that later they can educate and raise awareness, directly or using external consultants, all other functions within the EMS, especially those figures provocative significant environmental impacts.

5.3.3. Communication (Standard section 4.4.3)

Following the meeting with RGA, the system was developed that guarantees all communications from the Municipality of Maratea, both internal ones, between the various levels of the municipal organization, and external ones, to and from the Municipality. There were only small changes to the already tested communication system in force within the Municipality, with a Protocol Office and the various Heads of the Sectors concerned. The main issue to be solved highlighted by RGA was to be able to insert environmental communications within the municipal information system, avoiding burdening the procedures, while still managing to respond to the various requests from interested parties.

5.3.4. Documentation of the environmental management system and Documentation Control Points (Standard sections 4.4.4 and 4.4.5)

Alongside the communication aspect, the documentary aspect is also fundamental for every organisation. Precisely for this reason, from the meeting with the Head of the Environmental Management System, the methods and responsibilities for the management, distribution, revision, archiving and elimination of all documentation and records produced with the SGA were immediately established.

5.3.5. Operational control (Standard section 4.4.6)

The Municipality of Maratea is required to identify the municipal activities related to significant environmental aspects and to draw up procedures and operating instructions to plan the methods of carrying out these activities. Since many of the municipal services and activities have been handed over to a few private companies, the Operating Procedures (OPs) I prepared, following the comparison with RGA, were few, since many of the activities were combined. Within this point of the standard, there is also the procedure on Supplier management mentioned at the beginning of the relationship precisely due to the difficulty of defining the relationships between multiple subjects competing for the operation of the same activity, product or service. The action that will be carried out by RGA will therefore mainly be a detailed check on the suppliers of the sewerage system, the sewage treatment plant and water discharges and the municipal aqueduct.

5.3.6. Emergency preparedness and response (Standard section 4.4.7)

For the proper functioning of the EMS, the Municipality of Maratea must immediately set up a Procedure for the management of emergencies, to mitigate the environmental effects of any accidents or emergencies, or to be able to prevent such episodes in advance. From the meeting with RGA, therefore, a procedure for prevention and training began for the municipal staff involved in the EMS

with the definition of tests of the main emergency procedures through practical exercises. The support of the Civil Protection will also be extremely useful, with their Municipal Plan, often already involved in monitoring and aid actions, especially during the summer period.

5.4. Inspections and corrective actions (Standard section 4.5)

The next stage is also divided into several points and is the part of monitor measures, controls and corrective and preventive actions.

5.4.1. Monitoring and measurement (Standard section 4.5.1)

Since the City of Maratea, as mentioned above, has given many of its activities and services to external companies, RGA is kept at constant surveillance of such activities to verify the actual performance of the duties assigned to them. This commitment must be primarily aimed at monitoring the quality of bathing water, management of waste collection and municipal landfill and consumption of water resources and energy, three of the most critical parameters that are found in Maratea.

5.4.2. Nonconformity, corrective and preventive action (Standard section 4.5.2)

During the carrying out of municipal activities, following internal or external audits, internal communications or reports from the external parties involved, situations of non-compliance may occur, that is, failure to meet the requirements laid down by the EMS. As we are still in the preparation phase of the EMS, this part of the system is still to be verified. However, it was extremely important already from these first meetings with RGA, as established by law, to prepare a series of preventive actions to avoid incurring non-conformities, alongside corrective actions, to be established in the event of non-fulfilment of the requirements.

5.4.3. Recordings (Standard section 4.5.3)

Adherence to this point consisted of the standard, after meeting with RGA, in preparing all necessary documents for the implementation and operation of the EMS test and the effective functioning of the system is complying with the requirements of the standard reference and applicable environmental regulations.

5.4.4. Audit of the environmental management system (Standard section 4.5.4)

As stated above, this phase of the standard has not yet been achieved are in the early stages of EMS. However, it should be noted the extreme importance of the audit activity, namely the activity of assessment and control following the system to its planning and proper implementation, as well as provide data to the municipal management on the results of that verification activity. However, I have seen an audit at the towns of Gragnano Trebbiense and Carrodano (PC), as an observer accompanying a colleague of Eco Auditing Ltd, consultant for these two public bodies, during an audit of the certification by the independent Certification CertiQuality. It is worthwhile to note the difference between the various types of audits. One speaks of first part Audit to activities of internal audit that the organisation do the same to ensure that the EMS is meeting the requirements and standards as established by the Environmental Policy and Procedures Manual in and whether it is implemented with an effective achievement of environmental objectives and targets. The second part Audit is the monitoring and verification activities that the organisation has made to suppliers to ensure conformity of the latter to environmental legislation in place and the requirements for the suppliers of the organisation by SGA. Finally, the third part Audit is the final check and verification activities carried out by the certification of the organisation before the granting of certification to ensure compliance with environmental legislation is binding and the correct implementation of the EMS.

5.5. Management review (Standard section 4.6)

The final requirement of the standard provides for a review by senior management to the municipal Environmental Management System to allow EMS to achieve always the established environmental performance within the Environmental Policy. Even at this stage, I did not take part in the exclusive competence of the organisation management.

6. Procedure for certification

At the end of the design and implementation phase of the EMS, a further meeting is scheduled with the managers of the Environmental Management System, following which the system documentation, Analysis, Manual and list of Procedures are delivered to the certification body. Before the start of the certification process, a system operation of at least three months is usually required, including a complete internal audit cycle and management review. Approximately twenty days after delivery, a pre-audit is carried out by the certification body, as a prior verification activity to the actual certification audit. All these phases take place with the operational support of Eco Auditing consultants. In the municipality of Maratea, this phase is scheduled for the end of June; approximately forty days later an audit visit is carried out by the certifying body for the issue of the relevant certificate. Certification obtained A second verification visit by the third-party audit certification body is planned approximately six months after the further inspection visits defined as surveillance will take place once a year.