Chapter 9
Guidelines for Environmental Labels in the Agri-Food SMEs

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9.1 Introduction

The sustainability of the productive processes is a factor of great competitiveness for the companies especially for those which intend to answer to the increasing request of social and environmental responsibility by the consumer. For this reason the research of procedures able to guarantee the respect of the environmental resources is growing in all areas. The energy theme, the climatic changes, the water consumption, the exploitation of the soil, are just some of the examples which will deeply bear on the productive processes in years to come. This trend will be more definitive for the agro food sector both for its specific exposure to some risk factors (e.g. the climatic one), and for the importance of the relationship between the producers and the consumers about the quality and health of the agro food productions.

Today, the production of quality foods using eco sustainable processes not only is a need for the consumers, but it is important also for the organisations involved into the productive processes (from the single farmer to the great sector company), aware that a great attention on the environmental problems and on the improvement of the environmental performances of their own products can produce considerable energy savings of resources and materials, converting them into economic benefits (Defra 2010).

In the last years it has been thought about the more suitable instruments to direct the efforts of the firms towards the renewal of the productive processes to

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involve the environmental performance, and to give the products an objective environmental value, recognisable and saleable on the market. In this context, as it has already discussed in the preceding paragraphs, the use of trademarks and environmental declarations should appear both functional to demonstrate the responsibilities of the companies towards the use and the management of the sustainable environmental resources and a way to communicate this commitment to the consumers and the stakeholders (Coldiretti 2011).

However, the firms wonder which is the more incisive and suitable instrument of environmental communication for the characteristics of the products and for the distinctive features of the sector to which they belong. This becomes particularly important in the agro food productive context where the characteristics of the products are the result of the interaction among very different subsystems, from the farming to the transformation and marketing processes.

With the passing of time, in this sector occurred the springing up of voluntary environmental labelling systems used as instruments of environmental communication and useful to obtain a commercial feed-back of the eco sustainable management which, as it has been described in the preceding section, can be on a single criterion (e.g. the carbon footprint) or on multiple criteria. The result is a varied survey and it becomes extremely difficult and complex for the operators to choose the more effective label which explains the values of their environmental involvement and the application of the operating modes of the chosen labelling system. Hence, it follows the need to carry out some guidelines which, considering the peculiarities of the soil, the specificness of the products, the characteristics of the supply chain, of the company operative context and of the final reference markets, give the firms a way to choose the more adequate environmental label for their agricultural and food products and which allow to bring out their communication strategies and the visibility on the market.

These guidelines should represent an innovative instrument suitable to evaluate the characteristics and the environmental impacts of a product/service and suitable to assist the firms which want to apply an environmental label to their own outputs, choosing a communication system close to their realities through the evaluation of objective, comparable and believable information (Lo Giudice and Clasadonte 2010).

The outlined and written guidelines are the result of an exhaustive study which has highlighted the more common problems among the operators who intend to implement an environmental communication instruments into their productive chain. The starting point is both the respect of the laws applicable to the compartment and the European, national and local rules in force or those deriving from voluntary agreements signed by the organisation and by the codes of good conducts (Schau and Fet 2008).

Moreover, they have been realised to obtain an environmental labelling system which constantly updates the "profile of the green consumer": it refers to the buyer who takes into account not only the qualities and the price of the product but also the quality of the environmental performances of the same product.

9.2 A Framework of Guidelines for Environmental Labels and Declarations for the Agri-Food SMEs

The proposed guidelines are presented in the following index, where each paragraph is divided in some sub-paragraphs which go into further detail (Table 9.1); the first two paragraphs have introductory features, while the others refer to the procedure needed for the process of environmental labels and declarations.

Below the paragraphs and the subparagraphs will be described in detail following the numbering reported in Table 9.1.

9.2.1 Structure of the Guidelines

9.2.1.1 Introduction

In the last decades, the communication of the values, actions and environmental performance has become the principal activity of organisations considering the growing interest of the stakeholders in the environmental themes. Through environmental communication, organisations are able to show the environmental implications of their activities, outputs and services, meeting the requests of more information from the workers, investors and the other parties concerned.

The presented guide lines are coherent with ISO 14020:2000 (*Environmental labels and declarations—General principles*) and the ISO 14063:2010 (*Environmental management—Environmental communication—guidelines and examples*) set of standards which, in the literature, are the reference international regulations.

They reflect the aim of a continuous improvement supported by the Deming Cycle (Plan-Do-Check-Act) taking into account the peculiarities and the environmental and managerial problems of agri-food chains; their general features can be applied by all organisations in the agri-food sector, regardless of their size, position in the productive chain and location; it is a structure based on iterative procedural steps which suitably supports the decision processes necessary for choosing the label and is linked to the product-driven environmental management system (POEMS). Finally, the guidelines provide a precise analysis of the technical, operational and managerial aspects of the single company so that users can be aware of the effectiveness and the feasibility of environmental labelling of food products.

A correct and coherent use of the suggested guidelines gives the management the opportunity to provide distributors and consumers with the necessary information to choose eco-compatible products consciously: the information refers to the different steps of the realisation of the product, the product itself, the environmental impacts of its performances, product conservation and re-use and/or disposal of the packages at the end of the life-cycle of the product.

Table 9.1 Structure of the guidelines

Section	Subsection
1. Structure of the guidelines	1.1 Introduction
	1.2 Aim of the guidelines
	1.3 Advantages of the guidelines
2. Aims and purpose of environment labelling	2.1 Terms and definitions
	2.2 Principles of environmental communication
	2.3 Environmental Labels and declarations
3. Starting assessment of the company	3.1 Analysis of the general and environmental characteristics of the company
	3.2 Environmental aims of the company
	3.3 System boundaries
	3.4 Lawgiving references
	3.5 Company voluntary certifications
	3.8 Company knowledge of labels and of environmental declarations
4. Environmental Communication Policy	4.1 Commitment of the management
	4.2 Planning of the communication activities
	4.3 Individualisation the company resources involved
5. Company strategies of environmental communication	5.1 Contents of the communication
	5.2 Reasons for company communication
	5.3 Communication Techniques
	5.4 Operating time
	5.5 Specification of the target group
6. Characterisation of the labelling system/ environmental declaration	6.1 Identification of the company environmental impacts
	6.2 Indicators of the company environmental performance
	6.3 Decision Support Tables
	6.4 Choice of the most appropriate labelling system
7. Reporting	7.1 Drafting of the required documents
	7.2 The team of the environmental communication
	7.3 Logo
	7.4 Supports for environmental communication and channels to be used
8. Valuation of environmental communication	8.1 Evaluation of environmental communication
	8.2 Periodical Audit
	8.3 Cost analysis
	8.4 Advantages of labels and environmental declarations
	8.5 Potential integration with other firm management instruments
	8.6 Final recommendations and continuous improvement

To define this model it was important to consider all the environmental, social and economic aspects, which were often in contrast with each other, due to the different actors which operate along the entire chain.

9.2.1.2 Aim of the Guidelines

This document is useful for the companies belonging to the agri-food, product, regardless of their size and location; it will help them to decide and adopt the voluntary environmental labelling system which is in accordance with the company needs and characteristics. In order to give detailed information about the labelling, it is necessary to consider some specific information about the interested organisation, such as the managerial, organisational, environmental and structural aspects.

The guidelines also provide a complete analysis of the impacts along the entire productive chain using instruments conceived to implement the company policies for the prevention of the impacts and for the improvement of the environmental performances.

9.2.1.3 Advantages of the Guidelines

The proposed guidelines are derived from objective environmental assessments, so during the application phase they could make the management more aware of a higher control of the productive processes and of a more responsible management of all the company activities thus making sure production improves continuously in terms of environmental performance.

Being divided in iterative procedural steps, the guidelines support the company management in their choice of the environmental label suitable for the company's productive reality. The management will, therefore, be able to communicate (to distributors and consumers) objective environmental information on the products and services which are, consequently, comparable and believable. The guidelines can also be adopted by companies which want to acquire a real competitive advantage and hope to enhance the value of their product within the framework of a general improvement in terms of economic, ecological and social performance.

This document has been drawn up to help companies which can thus easily implement a policy of environmental communication; moreover, through the quantification of the different environmental impacts along the entire life cycle, it is possible to transform them into commercial advantages, attracting the groups of consumers who are more sensitive to eco-sustainability themes.

9.2.2 Aims and Purpose of Environmental Labelling

9.2.2.1 Terms and Definitions

In order to facilitate the reading of this document, the following definitions have been reported:

- **aim**: definition of the performances which the organisation intends to achieve within a determined period of time; this definition has to be fixed by the top management;
- **audit**: systematic verification process to determine if the activities and the respective results conform to the planned activities, if the activities have been really performed and if they are suitable to reach the aims and the policy of the organisation;
- **best available techniques**: most effective and advanced stage in the development of an activity and its methods of operation, which indicate the practical suitability of particular techniques for providing, in principle, the basis for emission limit values designed to prevent or eliminate or, where that is not practicable, generally to reduce an emission and its impact on the environment as a whole (Sect. 5 of Environmental Protection Agency Acts, 1992 and 2003, and Sect. 5(2) of the Waste Management Acts 1996–2005);
- **continuous improvement**: improvement path which constantly goes on and which involves the entire company structure and which can be reached through the application of the Deming cycle PDCA: "Plan"- resources management; "Do"—processes management; "Check"—control data analysis; "Act"—measurement, analysis and improvement;
- **education**: an educational process which transfers to workers and other subjects who work in the prevention and the environmental protection sectors useful knowledge and procedures for them to acquire the abilities to do their own work safely by identifying, reducing and managing risks;
- **environmental communication objective**: the environmental communication goals consistent with the environmental communication policy which an organisation sets up as part of its environmental communication strategy;
- **environmental communication policy**: the intentions and directions of an organisation related to its environmental communication as formally expressed by top management; the environmental communication policy can be a separate policy or part of other policies within the organisation;
- **environmental communication strategy**: organisation framework for implementing its environmental communication policy and for the setting of environmental communication objectives and targets;
- **environmental communication target**: detailed performance requirement, applicable to the organisation, which arises from the environmental communication objectives and which needs to be set and met in order to achieve those objectives;

- **environmental communication**: process that an organisation conducts to provide and obtain information, and to communicate with internal and external concerned parties in order to encourage a shared understanding on environmental issues, aspects and performance;
- **environmental impact**: the elements of an activity, of a product and/or a service done by the organisation and which can interact with the environment and which can be important to establish the company aims; the environmental impacts to be considered can be divided in direct (emissions in the atmosphere, water waste, management waste, the contamination of the soil and of the subsoil, the use of natural resources, energy and raw materials, noise, vibrations, smell and fumes, visual impact) and indirect (design, packaging, transport, use, waste, recycling, disposal, catering and innovation of the products);
- **environmental indicators**: numerical data and qualitative information which help evaluate the performance and efficiency of a company or collective system activities which aim at safeguarding the environment;
- **external communication**: procedures to communicate to the stakeholders data and information about their own services concerning the environment, including the results of the management review and of the monitoring system;
- **green marketing**: instruments based on strategic incentive and on competitiveness, which are extremely important for the firms which base their communications on the strong and concrete improvement of their own environmental performances and which try to meet the increasing sensitivity of the consumer to environmental defence;
- **information**: the set of activities necessary to identify, reduce and manage the risks in the work environment;
- **interested party**: person or group concerned with or affected by the environmental performance of an organisation;
- **internal communication**: an indispensable aspect to motivate the staff to carry out, vertically and horizontally, the policy and aims of the organisation, responsibilities, the results of internal verifications and the voluntary and legally binding prerequisites;
- **LCA (Life Cycle Assessment)**: systematic analysis which assesses potential associated impacts, quantifying the energy and material flows of the entire life cycle of the product (Society Environmental Toxicology and Chemestry—SETAC, 1993);
- **leadership**: commitment and involvement of the high management, fundamental for the development and the maintenance of a voluntary management system to achieve the aims of the organisation;
- **organisation**: company, corporation, firm, enterprise, authority or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own functions and administration; for organisations with more than one operating unit, a single operating unit may be defined as an organisation;
- **performance**: measurable results related to the control and the quantification of environmental impacts on the different sectors of the productive activities of the organisation;

- **procedure**: a specific way to carry out an activity or a process; it is supported by some documents, if they exist, and which describe the ways, responsibilities, time, input and output data used by the organisation carry out particular activities or processes;
- **sub-suppliers**: economic body of the supply chain which, directly or indirectly, provides the supplier with goods and/or services necessary for the production of the goods and/or the services for the organisation;
- **suppliers**: commercial body which supplies the organisation with goods and/or services used for the production of goods and/or services for the organisation itself;
- **system boundaries**: set of criteria specifying which unit processes are part of a product system;
- **target group**: interested party or parties selected as the focus of an organisation's environmental communication activity;
- **training**: a complex of the activities necessary to teach the workers the correct use of equipment, machines, plants, substances, devices and working procedures;
- **voluntary management systems**: part of the general company system associated with the activities of the organisation which include: organisational structure, activity planning, responsibilities, praxis, procedures and resources. The aim of these systems is to elaborate, implement, achieve, re-examine and enhance the company policy by going beyond the legally binding sector standards.

9.2.2.2 Principles of Environmental Communication

For the drafting of the guidelines the use of a suitable language which has the following characteristics is required:

- **appropriateness**: make information provided in environmental communication relevant to interested parties, using formats, language and media that meet their interests and needs, enabling them to participate fully;
- **clarity**: ensure that the environmental communication approaches and language are understandable by the concerned parties to minimise ambiguity thanks to a strict scientific base but easy to read;
- **coherence**: the label has to provide information coherent both with the context in which the product is made, distributed and consumed and with the aim and the category to which it belongs;
- **comparability**: if the environmental performances of a product are a criterion of choice for the consumer, it is necessary to compare them with the clear and unambiguous data of the competitive products, using temporal reference, environmental parameters and comparative terms;

- **comprehension**: environmental communication has to be clear, immediate, comprehensible, precise and not misleading regarding the real environmental impacts of the organisation;
- **credibility**: conduct environmental communication in an honest and fair manner, and provide information that is truthful, accurate, substantive and not misleading to interested parties. Develop information and data using recognised and reproducible methods and indicators;
- **easy understanding for the users**: environmental communication has to be easy to read and understand by the users-consumers in order to lay down the conditions to make more conscious choices;
- **effectiveness**: capacity of the communication to achieve the goals that the company has fixed to reach using a stated trademark;
- **readability**: the information reported in the label has to be incisive and essential in the context and readable from a graphic point of view;
- **reliability**: characteristic which underlines the necessity of truthful and verifiable information;
- **responsiveness**: ensure that environmental communication is open to the needs of interested parties: it should answer the queries and concerns of the interested parties in a full and timely manner and make interested parties aware of how their queries and concerns have been addressed;
- **transparency**: the processes, procedures, methods, data sources and assumptions used in environmental communication available to the parties concerned, taking into account the confidentiality of the information as required. Inform interested parties of their role in environmental communication;
- **truthfulness, accuracy and deceiving communication**: a strategy based on technical and detailed information given through the label of a product which is correct but not effective if language and the style do not suit the knowledge of the average consumer;
- **visibility**: a fundamental role is played by the position of the label on the product; the label must be easily traceable and recognisable on the different packages—boxes or tins- it must contain and highlight environmental information; its ultimate aim is to standardise the formats in which the trademark is presented, thus making the information clearer for the consumer.

9.2.2.3 Environmental Labels and Declarations

Type I "LCA Eco-labels (ISO 14024)": these labels are generally voluntary, multi-criteria based, third-party verified schemes that award a licence to use the scheme label/logo for specific products or services that meet prescribed standards based on a life cycle assessment approach including, for example, energy and water consumption, emissions, disposal, etc. The standards and scheme criteria are

usually developed through the involvement of stakeholders and awarded after an independent process of verification.

Type II "Self-declared environmental claims (ISO 14021)": this type of label is the most widely used to provide environmental information to consumers and other stakeholders. According to the official ISO definition, these labels are not awarded or verified by an independent authority but usually developed internally by companies and tend to take the form of a declaration, a logo, a commercial, etc. For example: "made from x % Recycled materials", "Biodegradable", "Recyclable" or "Free from chlorine".

Type III "Environmental impact labels (ISO 14025)": these labels are one of the most detailed forms of providing environmental information and, like Type I, are based on life cycle impacts. These types of labels are dedicated to specific products and do not normally assess or weight the environmental performance of the products that they describe but only provide raw data, such as the quantity of emissions. Their evaluation is left to the consumer. Many of the carbon labels fall into this category whereby the amount of CO_2 eq. emitted (as g/unit) is provided on the label.

Type IV "Environmental impact labels (No ISO standard)": these go beyond the definition of ISO Type II and they are submitted to an independent verification by a third party but do not rely on a life cycle assessment approach or actual measurements. These labels are generally based on a set of "best practice" criteria or standards which are used to differentiate the single product from the main stream products, usually on the basis of the reputation of the organisation issuing the label. For example, the Forest Stewardship Council certifies that labelled products are from forests which are managed following a specific set of protocols. An auditing process is undertaken to verify compliance and add credibility but a life cycle assessment of practices and their environmental impact is not undertaken.

9.2.3 Starting Assessment of the Company

The starting point to implement a voluntary environmental labelling system is a "starting assessment" which verifies the knowledge and the sensitivity of the organisation to environmental themes and helps to identify all the environmental impacts along the productive process. Moreover, it highlights the organisational, managerial and processing needs of the company which are the starting points to choose the type of environmental labelling system path.

This evaluation is the first and most important phase for the fulfilment of this project: evaluation and development cover the strengths and weaknesses of the company, its opportunities and its difficulties, the existing procedures, the available resources and the position of the company regarding the legally binding and voluntary prerequisites with a view to verifying the feasibility of the company's course of action.

9.2.3.1 Analysis of the General and Environmental Characteristics of the Company

In order to facilitate the monitoring of the company performance some check lists were made. They are easy to understand and useful for companies when they want to make a preliminary evaluation of the requisites of environmental labelling and any possible drawbacks.

The management has to answer some specific questions which verify both the general data connected with the internal organisation of the company and the main environmental aspects with a view to pointing out the most important problems.

This helps to set the productive site in its territorial context and to acquire complete information on the different environmental impacts of the company's productive activity related to the atmosphere, hydrosphere, soil, etc. This is the simplest way to fix the aims and programmes of improvement, intervening on the most critical areas and pointing out the resources necessary to achieve the target.

The correct use of the guidelines can help companies which want to check their environmental policy with the aim of carrying out an eco-sustainable and responsible management of the natural resources; moreover, the guidelines can also facilitate the inspection and control activities thus ensuring the correct use of the undertaken precautionary measures.

- Company general data
  - company name;
  - sector of business;
  - number of company units and branches if there are any;
  - number of employees;
  - market research done regarding Quality and Security;
  - economic and human resources intended for R&S activities;
  - presence of external consultants in the course of the planning and development of the productive process;
  - request of certified products (e.g.: PDO) from customers/consumers or customers/producers;
  - according to the company's experience, the sensitivity shown to environmental themes by Italian/European consumers.
- Analysis of the productive process and innovations
  - considering the entire life cycle of the product/service, indicate the steps of the productive cycle (Es.: Wheat farming, grapes, olives, transport of the raw materials, processing-production, packaging, shipment-transport of the finished products);
  - for each step of the productive process point out the main associated environmental impacts;
  - identify the area where the environmental impacts generated during the different steps are more concentrated (atmosphere, water, soil);

- specify the farm production used by the company or by the suppliers (conventional, integrated, biological);
- if used, indicate the dressing, fertilizer, pesticides directly involved in the productive process/indirectly by the suppliers;
- transformation processes of the raw materials before putting them into the productive process and any possible environmental impact;
- use of renewable energy source during the entire productive cycle;
- indicate any transformation processes (cooking, drying, sterilisation, etc.) of the input during the production phase;
- types of packages (wood, plastic, carton, metal, glass, etc.) used by the company;
- use of eco-compatible materials for the packages (biodegradable or recyclable, etc.);
- waste management system (urban and dangerous waste);
- internal or external company distribution network for the finished products;
- type of transport for the finished products;
- type of label on the finished products;
- type of product/process innovations in the last years;
- innovations and results achieved as a result of these innovations.

9.2.3.2 Environmental Aims of the Company

The aim of eco-sustainability is to generate the environmental policy of organisations, which is at the heart of environmental communication and offers the opportunity to the company to fix the starting point of its improvement process.

These aims have to conform to the nature and size of the structure; they have to respect the laws, environmental standards and other signed commitments, consider the results of internal checks and offer inputs for planning interventions and company activities. Moreover, they have to be reachable, measurable, documentable, suitable, modifiable and communicated to all the externally and internally involved subjects. To define these aims it is necessary to consider also the legal prescriptions, significant environmental aspects, any available technological options, resources, staff and the necessary know-how, means, plants, structures, premises and commercial and operative aspects.

Some of the aims which should be defined by the company are:

- development of more sustainable farming systems;
- information and education of the consumers about eco-compatible agriculture;
- prevention or reduction of the environmental impacts caused by the productive cycle on water, air and soil;
- respect for legal requisites;

- encourage the suppliers/customers to use Environmental Management Systems (EMS);
- modify the attitude of the consumers and of the industry towards environmental themes.

9.2.3.3 System Boundaries

The system boundaries define the unitary processes which have to be included into the system and the input and output factors of the productive process.

They change according to the aims to be reached: first of all, it is necessary to verify the means in use, the time and the availability of the necessary data; moreover, the analysis interfaces with the environment and with the other products which can be defined through a careful description of the examined system and the realisation of a flowchart of the productive cycle in order to plan the collection of the data and information outlining the range (Fig. 9.1).

A first delimitation of the boundaries is done considering the organisational, managerial and technological criteria and understanding the quantification of the environmental impacts and the productive processes which have to be checked for this analysis. The time boundaries are also a constraint for the analysis because they point out the gap in which the potential impacts of the product are evaluated and how certain parameters evolve.

The company has to fix exactly the products, the phases and the processes which will be treated by the chosen labelling system. The internal and external phases of the organisation should be the following: the acquisition of the raw materials, the

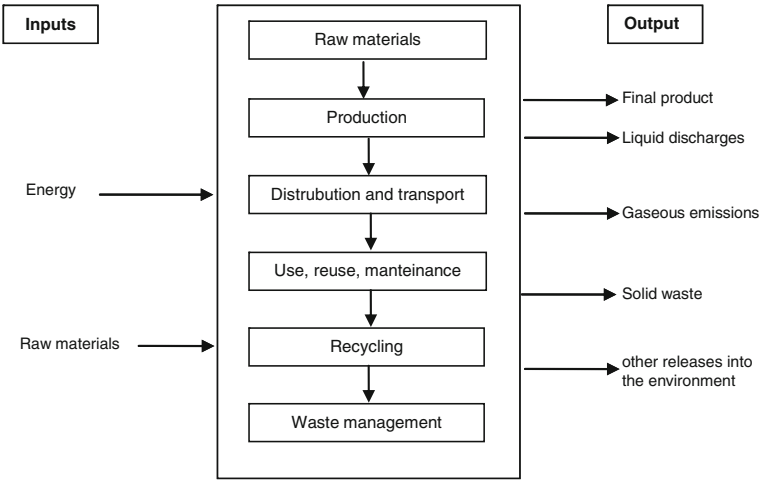

Fig. 9.1 Environmental input–output flow-chart

inputs and outputs in the main sequence of the production, distribution/transport, use of fuel, electricity and heat, product maintenance, waste, product and process disposal and further activities such as lighting and heating.

9.2.3.4 Lawgiving References

An organisation which aims at a voluntary labelling system has to start a procedure so that it can identify the official instructions applicable to its own reality, at the same time respecting national laws and the signed standards which refer to the operating sector and other laws connected with its own activity.

The organisation has to have a book with all the official instructions indicating the updating status in order to control their constant application and observance looking at constant improvement rather than the imposed limits. This book should contain information about the title, the reference number and the date of the law; the body which has enacted the document; the voluntary standard; the commitments met by the organisation.

A voluntary labelling system must first and foremost respect all the laws relating to the environment and products and/or services provided by the organisation.

By identifying the laws and standards connected with the activity, the organisation is able to verify the respect for official instructions, prevent any possible sanctions on the part of the Public Administration and verify conformity with the fixed aims.

In order to facilitate the self-evaluation process regarding the legally binding standards applied to the agri-food sector, also in this case, a check list has been prepared:

- difficulties found in carrying out the legally binding standards concerning the agri-food sector;
- difficulties found in monitoring the entire chain of the productive process;
- critical points in putting into effect the standard related to the traceability of the product and of the chain (Reg. CE 178/02);
- considering the legally binding standard, any possible faults found in the labelling system of the products;
- influence of the standard to indicate the presence of OMG (for example, Reg. (CE) 1880/03) mandatory in the raw materials to buy and to indicate the presence of allergenic substances and of their by-products (es.: gluten, Directive 89/2003/CE).

9.2.3.5 Company Voluntary Certifications

To verify the presence in the company of voluntary certifications of product/process the following check list has been prepared:

- regulated Voluntary Certifications of the product (es.: PDO "Protected Designation of Origin", PGI "Protected Geographical Indication", Biological, CDO "Controlled Designation of Origin", CGDO "Controlled and Guaranteed Designation of Origin", Ecolabel "Quality Ecological Trademark of the European Union");
- regulated Voluntary Certifications of the company process (es.: UNI EN ISO 14001:2004 "Environmental Management System"; UNI EN ISO 22000:2005 "Management System for the Food Safety"; ISO 22005:2008 "Agricultural Food Chain Traceability"; Reg. (CE) n. 1221/09 "EMAS Eco-Management and audit scheme";
- possible LCA study already used in the company;
- reasons why the company has chosen to agree to these standards;
- any possible aims and obtained results due to the choice of these standards;
- any possible problems during the certification procedure;
- any possible changes in the company organisation due to the adoption of the new standards;
- any possible certifications of product/process which the company intends to adopt in the middle term.

9.2.3.6 Company Knowledge of the Labels and of the Environmental Declarations

Considering the aim of these guidelines, this section is dedicated to the knowledge that the company management has about the labelling systems and the voluntary environmental declarations and their possible presence in the company. The relative check list follows:

- possible knowledge and/or adoption in the company of the voluntary system of Environmental Labelling of type I ISO 14024:2000 "Ecological labels which consider the life cycle of a product and are checked by an independent body of certification";
- possible knowledge and/or adoption in the company of the voluntary system of Environmental Labelling of type II ISO 14021:2002 "Ecological labels which report "self declarations" about the ecological characteristics of the product";
- possible knowledge and/or adoption in the company of the voluntary system of Environmental Labelling of type III ISO 14025:2006 "Ecological labels which report environmental information of a product according to pre established parameters and checked by an independent body of certification";
- possible system of environmental labelling which the company intends to adopt in the middle term.

9.2.4 Environmental Communication Policy

The policy of environmental communication is, within the methodical formulation of these guidelines, the starting point and the basic reference for the company to put into practice the outlined needs. It has to contain not only the aims and the principles of action which inspire the organisation, the moral commitment and the assumed responsibilities, the accordance with all the reference and the laws about the environment, but also the commitments dedicated to a constant and reasonable improvement of environmental efficiency. Moreover, in order to develop this policy, the environmental management inside the organisation should interact with the people responsible for environmental communication to make sure that the policy is coherent with the other company principles, policies and values. As a consequence, the management should implement this policy giving a few hints on how to formulate and modify it.

9.2.4.1 Commitment of the Management

The top management has to periodically check the adequacy, fairness and continuous effectiveness of the policy of the environmental communication inside the company, the procedures and the results of the environmental performances obtained following the signed requisites. Any possible system adjustments and necessary improvements have to be implemented within the previously described framework in order to guarantee the continuous improvement within the company. Moreover, the top management has to guarantee that, if possible, the environmental communication policy respects the cultural local, regional and/or national characteristics, and this policy has to be documented, implemented, kept active, communicated and made comprehensible for all the employees including the administrators, managerial staff, management, supervisors and operative staff.

The top management should promote a policy of environmental policy based on a continuous relationship with the stakeholders, on the information related to the environmental performances and on the critical points which have to be underlined. The commitment of the management implies the definition of the resources and of any useful means with a view to achieving the pre-arranged aims, the analysis and definition of the solutions for any environmental problems and the time and methods necessary to put corrective measures into practice.

The top manager can carry out this activity directly or through one of his or her representatives to whom all the necessary documentation is given. Programmed meetings should be foreseen both to verify the fairness and the effectiveness of the resources available for the environmental communication and to give each sector manager the opportunity to state their own activity.

9.2.4.2 Planning of the communication activities

In order to implement their policy of environmental communication, companies have to carry out some processes and activities which affect all the aspects connected with company communication. The aims and strategies of environmental communication need specific actions to be achieved, taking into account the environmental aspects, the geographical borders and the parties concerned. The planning which reflects the starting point of the Deming cycle, "PLAN", consists in establishing and developing one or more procedures to point out the environmental aspects of the actives, products and services which, being a priority, as the environmental analysis of Sect. 9.2.3.1 showed, can be controlled and influenced to reduce their impacts. The organisation has to quantify and carefully evaluate the most significant environmental aspects, compare them with the limits fixed by the law and decide on other targets using alternative technologies and trying to improve them.

When planning environmental communication activities, a company should consider the following aspects:

- coherence of the communication activity with the principles reported in Sect. 9.2.2.2 and with the company policy;
- presence of environmental monitoring techniques;
- promoting consensus among the different parties involved;
- consideration of the, different key aspects of the organisation;
- how easy it is to implement environmental communication inside the organisation;
- definition of the times and of the ways necessary to achieve the aims;
- clarity in sharing responsibilities and authority;
- consultation and involvement of all the company sectors;
- clarity and competence in training the employees and in giving them information;
- efficiency in implementing communication activities inside other branches of the organisation;
- efficiency in updating the communication activities in accordance with the changed company requirements;
- fairness of the economic and financial resources for the prefixed aims;
- fairness of the competitive productive capacity to support the productive and market choices;
- control of the fairness and measurability of the prefixed aims;
- attention to be dedicated to the procedures connected with the purchase process in order to guarantee that the suppliers abide by the laws and the criteria signed by the organisation and its environmental policy.

9.2.4.3 Individualisation of the Company Resources Involved

This step should be identified by the "DO" of the Deming cycle.

The company should allocate the right resources to carry out its policies of environmental communication necessary to reach the prefixed aims. For this reason some initiatives should be taken in order to survey the necessary economic, human and technical-structural resources and any other related sources. A treatment of three different types of resources distinguished in their respective categories follows.

- Financial resources

In order to achieve an effective and efficient communication, it is necessary to manage suitably the financial resources which compare the resources engaged, the pre-arranged plans and the beginning of the consequent actions. Also the allocation of funds has to be completed with a view to setting up programmes of technological development such as those concerning the improvement of the effectiveness and efficiency of the productive processes or those necessary to put the legislative measures into practice (IPPC). Moreover, the completion of the financial reports help to verify the ineffectiveness or the inadequacy of the processes applied to the adopted systems, thus pointing out any necessary corrective actions.

During the evaluation of environmental communication activity, it is also important to consider the potential costs and consequences of "non-communication"; these can be tangible and, for a long period of time, they can be higher than those used for environmental communication in that they can burden the organisation with further costs such as damage to the image and reputation of the company. The company should assign proportionate financial resources to put its environmental communication policies into practice thus achieving the pre-arranged aims; for this reason the resources should be chosen after a detailed analysis of the involved resources, the pre-fixed plans and connected sources. It is fundamental to plan financial resources, which have to be part and parcel of the budgets and be under constant control; there might also be the necessity to assign financial resources to technological development programmes. Finally, the company should have a system of costs survey in order to measure and monitor the effectiveness and efficiency of the systems adopted within the company itself.

- Human resources

The human factor represents an indispensable resource for the company communication system because, to have good results, the top management has to demand that all the employees have acquired some appropriate training in terms of experience and competence; the organisation has to make sure that the employees have the right competence (acquired, for instance through their education, work, training or training courses) and awareness of the importance of their work. In order to do this, the organisation should insist on the necessity of training and

refresher courses. The company should make sure that through training and the refreher courses all the employees are aware of the environmental policies.

Moreover, the experience of the employees is a key aspect which influences directly and indirectly the conformity of the product performance to the requisites fixed by voluntary labelling.

Finally, the responsibilities given to human resources should not be relegated within environmental limits; they can also be found in other areas of the company organisation. From the organisational point of view, the management should plan an organisation chart which shows the structure of the organisation and its tasks, standards, responsibilities and duties to fulfil.

- Technical-structural resources

In order to implement correctly a policy of environmental communication, the organisation should define the technical infrastructures necessary (e.g. buildings and workplaces, transport, computing science and communication system, skilled workers) to guarantee both the product/service standards and also to satisfy the expectations and the necessities of all the parties concerned.

9.2.5 Company Strategies of Environmental Communication

The company management should develop a strategy to define its environmental communication policy; this strategy should include the aims of environmental communication, the identification of the stakeholders, when and how the company management has planned to communicate and the commitment of assigning the right resources.

A company, in fact, has to explain what it intends to achieve, taking into account its resources in order to meet the expectations of the stakeholders. Environmental communication is a part of the general environmental company activities and it should be coherent with the other elements of the management system, policies, strategies or other important activities. When the strategy has been defined, it has to be approved by the top management and then it can be used as the starting point of the environmental communication activities. A correct communication strategy has to be written and accepted by all the people who are involved in the communication activities, that is both internal and external subjects; it has to guarantee continuity; it has to be clear and realistic; it has to be in line both with the human, economic and technical resources of the company and with the market; it also has to be coherent with the company aims, the budget and the choice of the communication tools; it is to be understood and understandable by the final consumers and by all the stakeholders. So, it is necessary to point out the recipient and the aims that the company tries to reach, to identify the content of the message and the way to transmit it, considering the type of people to whom it is destined (type and thorough examination of the information, language to be adopted, statement, etc.).

An effective strategy of communication should be built as follows:

- definition of the contents of the communication regarding sustainability (what has to be communicated)—the content;
- focusing the communication aims on the different stakeholder (why it has to be communicated)—motivations;
- selection of the instruments and planning of a Communication Plan (how it has to be communicated)—techniques of communication;
- identification and characterisation of the stakeholder (to whom it has to be communicated)—target groups.

9.2.5.1 Contents of the Communication

The message and the contents of the communication are a crucial point for the definition of a strategy because what has to be taken into account is not only what has to be communicated but also what can be communicated, that is the actions carried out and the results achieved by the company and which can be appreciated by the stakeholder; also what is better not to communicate is to be taken into consideration. This is particularly true for the environmental implications of the activities carried out by an organisation which can have environmental impacts on the territory; but it is also important to understand what the stakeholders expect to know through environmental labelling and how much they really understand what has been transmitted to them. The label has to focus on the most significant environmental aspects of the product; so the firm can promote the environmental aspects of the product using data which increase its value, for example, by giving further information and inviting the reader to consult the website of the agri-food firm.

9.2.5.2 Reasons for Company Communication

The company must have clear objectives in their communication to customers and stakeholders, which can only be achieved by adopting different strategies; the aims of environmental communication, in fact, change in accordance with the type of stakeholder and the context in which the communication flows develop. The system of voluntary environmental labelling has to meet the needs of the consumers who consider environmental performance as part and parcel of the productive process; therefore, the real challenge is to make environmental improvement associated with product consumption concrete and perceptible in order to persuade the customer-consumer of the real utility of the labelling as a means to safeguard the environment. For this reason the label has to show the market, in an effective way, the company's commitments to safeguard the environment and/or the concrete results in terms of the ecological performance of its products.

9.2.5.3 Communication Techniques

What is important is not only what has to be communicated but, above all, how to communicate it, choosing the most effective and correct method at the same time taking into account the recipient and the content of the messages: each category of stakeholders, in fact, has specific characteristics which can make communication useless or self-defeating if it is not well-planned in terms both of content and of the language used. For example, a label which reports environmental parameters in an excessively detailed and complex way cannot be appreciated by a consumer who does not have the skills to appreciate it.

Information should consider the behavioural, social, cultural, educational, economic and political interests of the target groups; an appropriate language register has to be used; the use of images and electronic media has to be coherent with the chosen approach and, in case it is relevant, with any other information on environmental aspects previously communicated by the firm. An organisation should test its own communication procedures before actually addressing its public; for this reason market research should focus on the customers' expected needs. Any communication about environmental impacts has to be based on data which have been aggregated in a believable and clear way; a label is, and will always be, a simplified way of communicating something which is much more complex. Communication contents can include:

- impact areas and environmental aspects because if the label refers to just one of the environmental aspects, it will not be clear;
- the system, to which the impacts refer and which has to be clearly defined;
- the functional unit of each impact which should be clearly expressed;
- the labelling scheme which has to complete other initiatives concerning the same aspects inside the organisation.

9.2.5.4 Operating Time

An implementation strategy of an environmental labelling system has to consider the important time variable. External circumstances and events might make it necessary to synchronise environmental communication; sometimes specific communication activities have to be anticipated or postponed by internal conditions of the firm. It is important to define the most appropriate actions in order to achieve the set target and to be able to make sure that the actions make effective progress; so it is possible to work out an agenda which organises a set of activities and events taking into consideration the interrelations among the various actions, thus monitoring progress and optimising time and work procedures.

9.2.5.5 Specification of the *Target Group*

The company approach to environmental communication has to take into account its relation with the target groups; it is important to underline that environmental communication is a dynamic process and the relationship between the target groups and the organisation changes continuously. When choosing the approach for the most appropriate communication the needs and interests of the target groups involved in the communication, have to be taken into consideration. There are different communication approaches depending on whether the organisation and the target groups are active or passive. The aims of the environmental communication of the company, the target groups and the company resources available for the communication, can also condition the approach to be adopted. Identifying the recipients of voluntary environmental labelling means understanding all the categories of subjects which, for different reasons, have an interest in the environmental performances of the same firm; each category has specific characteristics in terms of values, interests and expectations but also in terms of reception, understanding and appreciation of the messages reported on the label.

It is important to underline that changes in consumers' attitudes and in industrial behaviour require different approaches; for example, a detailed report on environmental impacts and the use of environmental declarations for the product are maybe more suitable for the company's internal communication while simpler labels are more suitable to be addressed to the consumer. In any case it all depends also on the aim of the labelling system. For example, more detailed information is necessary when addressing consumers who are particularly sensitive to environmental themes and who already know about the environmental impacts of foods. In particular, in order to identify the recipients of the label, it is worth analysing some peculiarities of the organisation such as:

- the sector it belongs to;
- reference markets;
- total market share;
- market share which should be characterised by the consumers sensitive to environmental performance;
- analysis of its competitors;
- composition of the products portfolio;
- analysis of the needs of its own interlocutors;
- understanding of the environmental perception of the customers-consumers;
- environmental attention of the customers-consumers.

For this reason the interlocutors the company interacts with in the market and the variables which can condition their purchase choices should be compared. This leads to a precise assessment of the importance that each interlocutor gives to the variables considered.

Among the recipients of environmental labelling, one can find:

- final consumers classifiable according to their high or low sensitivity to environmental problems;
- average consumers or transformation industries which operate in the business to business market and which differ according to their grade of maturity and sensitivity to environmental problems;
- distributors who have different marketing and environmental needs depending on whether they fall into the large-scale distribution or the retail categories.

The following are just a few examples of the different methodologies and instruments of analysis of the target group:

- *desk research*: research, evaluation and revision of collected information available for a third party; the information comes from external sources of the firm such as public institutions, statistical sources, specialised press, research institutes, the internet;
- *market research*: it is done on the spot; it cannot be previously detected and can only be carried out following a direct research programme; it generally analyses the behaviour, characteristics and attitudes of the consumers;
- *interviews or personal contacts with the stakeholders*: these include meetings organised inside the firm or in neutral places in order to exchange honest and open information about specific aspects. This consolidates the trust among interlocutors. It might be difficult to identify all the concerned parties due to the time limit and the low preparation of the third bodies involved. In this case the role played by the skilled representatives of the parties concerned is fundamental in that they have to carry out a specific job;
- *focus group:* meetings with small groups of stakeholders, who have similar backgrounds, to discuss specific matters: in this case a free exchange of ideas is possible because the participants feel at ease among people who have the same opinions. Therefore, agreements are often reached even about important aspects; in any case these are long-term procedures because they involve the concerned parties.

However, it is essential for the enterprise to compare the analysis of the consumer with an evaluation of the market dynamics in order to identify and evaluate the different factors which justify the purchase of ecological products and which is linked both to the trends of the demand and to the characteristics of the offer of these products.

9.2.6 Characterisation of the Labelling System/ Environmental Declaration

This section is dedicated to the identification of the most suitable voluntary environmental labelling system for firms and connected with the different technical–economic parameters analysed using the check lists, the starting evaluations and the choices of the company strategies, already treated in Sects. 9.2.3–9.2.5.

9.2.6.1 Identification of the Company Environmental Impacts

As regards the exposure of the data related to environmental aspects and impacts, just for illustrative purposes the company can use synthesis matrix, like the one reported in Table 9.2 which is related to a generic productive process of a company belonging to any agri-food sector.

9.2.6.2 Indicators of the Company Environmental Performance

This phase corresponds to the "CHECK" of the Deming cycle and, to carry it out, it is necessary to identify and quantify the right environmental indicators.

The organisation has to analyse and quantify their own significant environmental aspects, mentioned in the environmental policy dealt with in Sect. 9.2.4, working out some sort of timetable whereby periodically environmental aspects are quantified, evaluated and compared to relative laws; new environmental objectives can be set, and, in this case, a new process begins.

In the literature and, above all, in the company practice, environmental indicators are divided into two categories: environmental performance and environmental impact.

The first indicator points to those quantitative and qualitative values which help to evaluate the effectiveness and the efficiency of the use of the environmental resource by an enterprise or an entire productive sector.

The second indicator is useful in the evaluation of the impact of enterprise activities on the natural environment. This impact can be calculated with the help of physical and monetary indicators.

Table 9.2 Environmental aspect and damage related to each productive process step

Productive process step	Environmental aspect	Environmental impact
Raw material (R.M.)delivery	Emissions in the atmosphere	Possible air pollution
	Noise	Possible damages to the operators' health
R.M. Verification	Waste	Possible soil contamination pollution
Cold storage room	Use of energy resource	Possible air pollution
		Greenhouse effect
R.M. Washing	Use of water resource	Impoverishment of unconfined ground water
	Waste Water	Possible pollution of hydric body water receptor
Grading	Use of energy resource	Possible air pollution
Packing	Use of energy resource	Possible air pollution
	Waste	Possible soil contamination
Shipment by road	Use of energy resource	Possible air pollution
	Emissions in the atmosphere	Possible damages to people's health
		Noise

Physical indicators measure the contribution of enterprise activities to the change in environmental conditions, locally and globally; they are an auxiliary measurement of the efficiency of the enterprise in managing natural resources and refer to the consumption of raw materials and energy, to the emissions of the productive processes and to the characteristics of the products.

Following the measurements of the quantities of natural resources taken from and/or discharged into the environment, the effects can be assessed.

Monetary indicators allow the enterprise to transform the changes caused in the natural environment into economic terms and so to integrate the environmental variable into the decision-making processes, which are traditionally based on economic considerations. The main requisites are reported below; no measure of the performance would be meaningful without them:

- *objectivity*: the evaluations on environmental problems carried out by companies are today too subjective;
- *demonstrability*: it is necessary to identify the action of the phenomena which have to be analysed;
- *significance*: clear and concise indexes can be elaborated but they do not really interest the management or the public.

Table 9.3 illustrates some indicators related to the impact categories of the company productive processes which can be applied to all agri-food firms with their related units of measurement.

For agri-food firms which, within the framework of their productive processes also carry out primary activity, it is necessary to quantify specific environmental indicators to measure the impacts deriving from the use of the Earth and of Biodiversity; the recommended indicators are:

- area of the habitat that is physically protected;
- area of the habitat which is not farmed but is identified as being environmentally important;
- total length of aquatic habitat that is physically protected compared with the total area managed;
- in environmentally protected areas the density off non-native vegetation;
- road length per unit area;
- areas dominated by native species compared with the total area managed;

Table 9.3 Examples of significant "Environmental Impact Categories" and their units of measurement

Impact category	Unit of measurement	Impact category	Unit of measurement
Climate change	kg CO_2 eq	Ecotoxicity	m^3—yrs
Stratospheric ozone	kg CFC-11 eq	Water use	l Water
Acidification	H^+ moles eq	Mineral resource	gm minerals
Eutrophication	kg N eq	Fossil fuel depletion	MJ eq
Photochemical smo	kg NOx eq	Land use/biodiversity	m^2 land occupied
Soil depletion	gm soil	–	–

- in environmentally protected areas the density of non-native vegetation;
- road length per unit area;
- area dominated by native species compared with the total area managed.

9.2.6.3 Decision Support Tables

Regarding the set of instruments able to support firms in choosing the most adaptive system of environmental labelling, a set of tables has been drawn up. Each table takes into account different aspects of the managing system, each of which is independent of the others; therefore, the firm will be able to choose one of the following aspects, obviously the one which satisfies its needs best:

- economic;
- environmental;
- need of the target group;
- content of the environmental communication.

At the end of this deliberate process, the firms will have all the necessary elements useful to make a discriminative choice among a labelling system of types I, II, III, and IV. When the typology has been pointed out, the firm will move towards the most useful and convenient label.

The idea of suggesting a way to identify the most suitable labelling typology, rather than just the label is due to the continuous evolution of the environmental communication instruments which are difficult to follow and predict.

- Economic aspects

With regard to the company commitment related to the estimate and amount of economic resources which can be used as a voluntary environmental communication instrument, different options are pointed out in Table 9.4, using an analogical presentation of costs.

Considering that, as has been said previously, type I environmental labels require the company to demonstrate label conformity to predefined parameters, the costs connected with the adoption of the trademark essentially depend on the type of laboratory analysis and on the internal procedures which the company has to develop to provide these guarantees; sometimes the payment of a royalty has to be added for the trademark used. Even though structural investments are not envisaged, this instrument turns out to be really expensive for the company which aspires to obtain the certification.

The environmental statements of type II are not all subjected to a certification system; at the moment, in case it is necessary, costs are not high and they generally refer to the demonstration of the truthfulness of what is communicated to the customer. In certain cases, such as the Carbon Footprint, it is necessary to make an LCA study and the costs are similar to the ones for type III labels.

Table 9.4 Levels of total costs of different environmental labels and declarations

Economic aspects			
$	$$	$$$	$$$$
Type I	Type II	Type IV	Type III

The costs related to type III labels refer to the necessity of making use of an external consultant who conducts an LCA study on the product or on the service, using a software and database available on the market; moreover, the costs increase because it is necessary to submit the study to a third body, attaching an environmental declaration of the product/service.

Finally, as far as type IV labels are concerned, the costs which have to be paid to the organisation which issues this certification have to be taken into account. For this reason, even if they are not ruled by ISO, sometimes these labels are more expensive than type II labels.

- Environmental aspects

If the productive process of a firm, which includes also the primary activity, can quantify some of the following criteria:

– total quantity of pesticide,
– plans for use of water,
– use of irrigation planners,
– pesticides and fertilisers periodically inspected,
– cultural practices,
– fertilizer and pesticide use,
– water consumption,
– fuel and electricity use,
– soil nutrient status,

the firm can then implement:

– Food eco-label Type I: SMK,
– Food eco-label Type III: Earthsure,
– Food eco-label Type IV: IFOAM Organic Production; LEAF Marque.

If the firm has already done an LCA study of its global productive process, or of a part of it, it can move towards these labelling systems:

– Food eco-label Type II: Casino Carbon Index (CCI);
– Food eco-label Type III: Environmental Product Declaration (EPD), carbon Reduction label, Earthsure.

If the firm wants to focus just on one of the criteria of the labelling system, e.g. the quantification of the greenhouse gas expressed in terms of emission of CO_2 eq/100 g of product, during the life cycle steps from raw material production to the consumer home (production—including agricultural processes; manufacture;

transport; packaging; distribution and point of sale), it can move towards the following labelling systems:

– Food eco-label Type II: Casino Carbon Index (CCI);
– Food eco-label Type III: CarbonNZero;
– Food eco-label Type III: Carbon Reduction Label;
– Food eco-label Type III: CarbonCounted.

Finally, if the firm has already implemented an Environmental Management System (ISO 14001:2006), it should implement:

– Food eco-label Type III: Earthsure.

- Necessity of the target group

The company can select the labelling system which best suits the different targets of the market, according to the features that each of them assume as regards the expected contents and the key messages which the company itself considers important in order to to fulfil its expectations (Table 9.5).

- Contents of the environmental communication

Table 9.6 offers an easy way to choose the labelling system and it is based on the key message decided by the firm and on the variables that it decides to insert in its environmental declaration and which can influence the choices of the purchase/consumption of its consumers/customers.

9.2.6.4 Choice of the Most Appropriate Labelling System

This phase corresponds to the "ACT" of the Deming cycle.

When the preferred criteria have been chosen, the company implements the voluntary environmental labelling system which best suits its organisational, environmental and economic features.

9.2.7 Reporting

During this phase it is possible to define the documents necessary to communicate the roles, the responsibilities and the authority needed to make the use of environmental labelling effective; the organisation has to decide and keep any paper or format documentation in order to describe the main elements of the labelling system and their interactions; these documents have to be kept under control. The documents have to be functional for the organisation which has to have a clear and exhaustive view of the procedures and of the internal activities necessary to implement the selected labelling system and to communicate it clearly to the

Table 9.5 Features of the company recipients and related environmental communication

Target group							
End user		Middle customer		Public Administration	Distribution		Government body of the territory
Uninterested Type II	Proactive Type I/III	Certificated firm Type II/III	Not Certificated firm Type I	Firm of services Type I/III	Retail shop Type II/III	GDO Type I/II/III	Type I/II/III

Table 9.6 Contents of the environmental declaration

Guarantees and certification forms	Environmental information	Environmental effects product/service as regards the consumer/ customer	Competitiveness as regards the non-environmental performances	Benefits of the health/security of the consumers/ customers
Type I	Type II/III	Type II/III	Type I	Type I

different people involved. The details of the documents should be sufficient to describe the main characteristics of the labelling system; the details and the quality of the documents will depend on the chosen labelling system and, of course, on the size and complexity of the organisation.

9.2.7.1 Drafting of the Required Documents

The data used to build up the system of the labelling/environmental declaration should be collected in order to be easily organised, kept and used by those who are interested in using them. The documentation should be managed in such a way as to have a fast access to all the information, especially, to the part which can become fundamental in critical situations and environmental emergencies.

The data evaluation should involve checks on accuracy, compatibility, reliability and applicability. The presentation of the collected data should mirror both the aim set and the target group.

9.2.7.2 The Team of Environmental Communication

The management should come to a decision regarding the procedures which define the responsibilities, times and ways of passing on the external communication to the different parties concerned; on the other hand, from them the organisation should expect to get some significant feedback so that it can give adequate answers. First of all it has to insist that the people responsible for the communication should transmit not controversial or vague but true information; the communication technique must not distort the message but, given that there are different interlocutors, information has to be as clear as possible and also define the times of the external communication. In order to verify the effectiveness of the communication it is possible to quantify some indicators such as: the number of the participants in the information meetings/number of invited people; number of cases of non-conformity due to ineffective messages/number of total non-conformity; increase in percentage of sales after the acquisition of the trademark; number of the external requests concerning the communicated environmental aspects, etc.

9.2.7.3 Logo

The logo can be put on the top of the package of the product.

It can also be put in the point of sale of the material; in the websites belonging to the product manufacturer or service provider; online reseller product catalogues (products) and online directories (service); advertising, product brochures, catalogues and other sales materials; in product manuals.

The aspect of the labels can be either a simple trademark which indicates that certain standards have been reached or in the form of a list of the emissions and of the impacts on different environmental areas. In both cases, labels are the result of the aggregation of data and information. It is important to make sure that this aggregation has been obtained in a believable and unambiguous way and within technically acceptable limits. The way of communicating the impacts on the label has to be as simple as possible; the label chosen has to be "suitable for the aim"; there are different ways to communicate environmental impacts on the label: for example, a single label should be used to communicate that the product respects a set of standards; other labels reflect the connected impact on a range of categories of impacts. In any case, when it comes to choosing the approach, the company has to bear in mind the aim and purpose of the label, which means that the aim can influence the related way of carrying out the communication.

9.2.7.4 Supports for Environmental Communication and Channels to be Used

When the company has obtained the environmental trademark which reflects its reality, it becomes fundamental to let the outside world know about the company's efforts to respect the environment. For this reason, the choice of the most suitable instruments and channels to transmit the message and its contents to potential recipients is extremely important; as the firm can use a range of channels; this choice is neither simple nor immediate. Information, in fact, has to be effective, readable, understandable and accessible to the interlocutors that the company has identified as its target.

The company can either opt to concentrate on limited publicity by preparing documents meant for the interested people, or it can decide to appeal to a large number of users. In the latter case it can prefer instruments such as the Internet and websites. Instruments are divided into two categories: *written communication channels and oral communication channels.*

Among the first:

- *websites*: an electronic means of communication, user-friendly for all concerned parties, internal and external. Thank to websites users can download reports, educational material, and links to sites where they can give feedback to the firm. The strength of websites is that they enable the firm to reach a large number of

users and thus give the right information. Moreover this means of communication can be easily updated. However, websites have a weakness too: often firms underestimate interactivity with the users; moreover, the data should be uploaded using a format which can be read also by the not updated computers; finally, websites must not be expensive and a telephone number dedicated to the requests of the customers is an important asset;

- *e-mail*: an electronic means of communication to exchange information, messages and paper material. It has got many strong points: it is cheap and simple to use; it can exchange messages and information very fast and can reach a large number of people quickly and at the same moment. However, it must be pointed out that many people have no access to the computer or to the e-mail and, moreover, messages can be deleted before being read if the content is considered unimportant;
- *environmental or sustainability reports*: these instruments give full evidence of the company commitments and performance regarding a certain number of extremely critical environmental aspects; excerpts or summaries of these reports can be included in other forms of communication of the company such as financial reports. The strong point of these reports is that they help the company to delve into the different environmental aspects and to guarantee a high internal transparency concerning its most relevant environmental aspects. The only drawback of these reports is that they are expensive and difficult to update frequently. They can also give information which cannot be compared with similar companies;
- *printed material* (*reports, brochures and newsletters*): reports and brochures contain a summary of the services, specific interests, key points and participation methodologies of the stakeholder. The strong points in this case are that they can single out and analyse, if necessary, just one of the environmental aspects; they are not expensive and quick to draw up; they can reach a great number people at the same time. The weak points are: they can be misunderstood and they provide just basic information; moreover they cannot get direct feedback. Newsletters contain a periodical update of the work activities. It is advisable to use a simple and objective language register, photos, maps and a reference telephone number;
- *posters*: put in the appropriate public places, they describe the project pointing out its main aspects. They give general information; their costs are low and they can also reach those people who maybe do not know anything about the project. The weak points are: they give information without receiving any; they have to be placed in visible places; they can use photos and they have to be periodically updated especially when it comes to names and telephone numbers;
- *magazine articles*: they describe the characteristics of a project or of a service, are addressed to a large audience and they are also a good means of general information;
- *advertisements*: advertising relies on the use of newspapers and sponsorship; it can reach a large audience but it can be expensive and, in any case, it offers limited possibilities to describe all the environmental aspects.

Oral communication channels:

- *public meetings*: they are a way of exchanging information and opinions. They are based on presentations and sections where the interested participants can have all their queries answered; their costs are minimal and they can reach a large number of people. The interaction among the participants should be limited and not all the points of view expressed can be taken into account. The presence of a chairman is advisable;
- *target group visits*: visits to the organisation area are organised in order to establish a direct contact with the company involved, showing the environmental actives that it is carrying out; the main disadvantages in this case are the limit of the number of participants and the use that has to be made of the working time of the human resources in order to organise the guided tour of the firm; it is advisable to organise tours just for those productive processes directly involved in the business strategies;
- *conferences and workshops*: these are an opportunity to exchange views with the parties concerned with a view to involving the company in high priority goals; they can be expensive from in terms of time and money.

9.2.8 Valuation of Environmental Communication

9.2.8.1 Evaluation of Environmental Communication

An organisation should take its time before the labelling system can actually be adopted. This time depends on the type of the chosen communication, the number of the parties concerned and their interests and the chosen communication channel. The organisation should review and evaluate the effectiveness of its environmental communication taking into consideration the following aspects:

- its policy of environmental communication;
- how the principles of environmental communication have been applied;
- if the set goals have been reached;
- the quality and appropriateness of the information given to the target group and the environmental communication itself;
- the procedure followed prior to the environmental communication;
- the feedback of the stakeholders;
- whether the environmental communication programme has favoured a relevant and effective dialogue with the target groups;
- whether the approach and the procedure followed have been clear;
- whether the environmental communication satisfies the needs of the target groups;
- whether the target groups have understood the aim and contents of the environmental communication.

The results of this evaluation process should be the basis for the top management's review of the company's policy in terms of environmental communication.

9.2.8.2 Periodical Audit

The organisation has to adopt the right methods to monitor and measure, in an objective and fair way, the performance of the system processes of the environmental labelling system; by so doing it can show the capacities of the actions taken to achieve the objectives set; if the results hoped for have not been reached, corrective actions have to be taken bearing the company targets in mind.

Each company should plan and programme the right internal control modes for the entire site and its activities concerning the environment in order to reach a sufficient starting level of environmental performance and to monitor efficiently the results produced by the virtuous circle of continuous improvement. Therefore, the internal environmental audit is in itself a kind of self-evaluation which is organised and managed in all its phases by the firm itself.

The auditors interested in this evaluation either belong to the company or are consultants or experts who act on behalf of the company management. For this reason it is important to identify the control and internal inspection criteria in order to facilitate the control activities, correction, audit and review of the environmental aims and to respond to any changes in the productive and market circumstances. Moreover, if some non-compliances occur, in order to intervene in appropriate ways, companies will have to make an effort to identify the causes and make sure that such situations do not recur, using the right procedures whereby the right corrective and precautionary actions can be taken. Through periodical audits the organisation can verify if the voluntary labelling system conforms to the planned actions and if it is being properly applied and kept active. In particular, it is better to control the procedures connected with purchases and contracts to make sure that the suppliers and contractors follow the environmental policy of the company; these periodical audits have to monitor the following: reduction in environmental emissions; reduction in the discharge; treatment and reclaim of wastewater; reduction in waste production; the use of a higher quantity of re-used, recovered and reclaimed products; preventive measures regarding soil contamination; rational and lower use of natural resources; energy saving measures using renewable non-polluting or low polluting sources,; reduction of noise, vibration, etc.

To this purpose test criteria should be identified; so should be internal checks using, for example, specific environmental communication indicators which have to be chosen or identified carefully in that they help the company trace any critical points and bear the interests of the parties concerned in mind. The indicators used by the organisation to evaluate communication have to be simple, precise, easy to understand and relevant to the process to which they refer.

Below are some of the possible indicators:

- number of letters/telephone calls/e-mail per unit time received by the concerned parties and connected with environmental aspects (e.g. number of e-mails in a month) and analysis of the content (positive or negative);
- number of complaints about some aspects, activities, environmental problems;
- number of awards received;
- number of articles published through the media;
- number of visitors (e.g. every month) looking for environmental information in the pages of the company website;
- number of outreach activities carried out and analysis, by means of surveys/questionnaires, of the most effective ones according to the target groups.

Considering the results obtained using the above-mentioned indicators, the company can organise a revision of its environmental policy or of the other policies and strategies.

To determine the need of a revision an organisation should:

- evaluate the suitability of the resources involved in the completion of environmental communication;
- evaluate the process of collecting data;
- distinguish between any necessary improvement in the information given to the parties concerned (including the information development process) and the communication process (including the approach adopted).

Before deciding to make any change in environmental communication policy, strategy or activity, the company should take into account the parties concerned, whether they can understand the change and how the firm can explain the reasons for this change.

9.2.8.3 Cost Analysis

There are a lot of costs linked to the implementation of the labelling system. Among them, the organisation should foresee:

- Labelling costs
  - cost of the external communication of the results achieved;
  - costs entailed by the definition of the technical characteristics that a product should have to conform to the chosen labelling system;
  - costs of the methodological determination and of the working cycle;
  - inspection and internal audit costs;
  - cost of the external communication of the results achieved;
  - cost of the audits carried out by the body which issues the trademark, if required;

  - cost of the internal personnel to be assigned the voluntary labelling system;
  - costs of the preparation of the logo, if required.

- Preventive evaluation costs
  - costs of the necessary market research to find out about the sensitivity of actual and potential customers to the environment;
  - R&D costs to create products which satisfy the requisites of the labelling system chosen;
  - costs of design and development of green eco-compatible products, which often require reports integrated by suppliers and customers;
  - costs of design to transfer the ideas and the principles put into practice during the research and development of the products.

- Costs of the best technologies available
  - costs of the introduction of clean technologies which reduce environmental impact;
  - cost of sewage recycling;
  - cost of production waste reclamation;
  - cost to install Renewable Energy Sources (RES);
  - cost of packaging change;
  - cost entailed by the use of re-used packages;
  - cost of the replacement of non-toxic impacting material;
  - cost of the new market opportunities for the re-use of raw materials;
  - costs entailed by the definition of the technical characteristics that a product should have to conform to the labelling system chosen;
  - costs for the determination of the methods and of the working cycles.

9.2.8.4 Advantages of Labels and Environmental Declarations

Environmental labels are a valid instrument as regards producers, consumers and distributors because they bring about different direct (financial) and indirect/external advantages.

There are three different categories of direct advantages:

- competitive advantages: environmental labels strengthen the relationship with the different actors of the chain defining the environmental position of the product, guiding the firm in the improvement processes and communicating the results to the consumers; they improve the relationship with the company stakeholders; they increase competitiveness and enhance the company image; they are a fundamental factor for the careful consumer; they indicate the continuous commitment to environmental issues; they open new markets where labelling is a prerequisite, for example the exportation of agri-food products into countries where these systems are well-established. The reduction of multiple labelling may be done through the self-evaluation of the company;

- economic advantages: environmental labels help point out any possible waste and save resources thanks to environmental efficiency improving environmental performance; they reduce the costs of energy consumption, waste management, water consumption, the flowing back treatment, raw materials and packages; they improve the evaluation of structural investments;
- managerial advantages: environmental labels improve the participation of the employees; they define exactly the skills and responsibilities of the single person; they help manage coherently the voluntary instruments already in the company; they improve legislative compliance, competitiveness and productive capability; they optimise company resources.
- Among the indirect advantages related to the introduction of environmental labels the following are worth mentioning:
- reduction of production costs due to the better technologies available which protect the environment, are run by more efficient management procedures and control the activities related to the environmental aspects of the productive process; this helps the company economise in terms of costs of energy, waste management (collection, transport, processing and disposal), water consumption, cleaning and discharge of the effluents, purchase of the raw materials and packages;
- improvement of the relationship with banks, capital market and insurance companies thanks to the higher attention of the firm dedicated to analysing environmental risk;
- reduction of the costs of administrative sanctions and detentions of activity of the plants due to the violations of the law regarding the environment;
- reduction in the costs of environmental consulting services and of the necessary equipment in order to re-establish the compliance with the violated environmental standard.

Labelling makes the community more aware of the impacts caused by convenience goods and promotes sustainable life styles by sensitising people to environmental issues.

Labelling also meets the needs of the distributors, that is the main actors of the large-scale retail trade who are fully aware of environmental problems and who demand stronger commitments from their suppliers. Therefore, labelling is not just meant for the final product but it can also be used within the supplier-customer relationship in the Business to Business area.

Finally labels, which give easy and understandable information about the environmental impact of the product, promote responsible consumption, help consumers choose the products which respect the environment and at the same time improve consumers' knowledge of environmental issues.

As a consequence, labels are not only a means of communication but also the result of the commitment of the company to manage the critical state of the environment, combining the efforts of both firms and consumers to put into practice a sustainable model of production and consumption.

Some of the risks that may have to be faced:

- lack of common standards and a consequent decay of competitiveness because of the behaviours of the more unscrupulous competitors;
- a constant lack of respect for implicit and defined standard;
- the adoption of a labelling system which does not comply with the type of organisation;
- the non-involvement of the personnel in environmental policy and strategies of environmental communication;
- the lack of adequacy of the actions taken with a view to the continuous improvement.

9.2.8.5 Potential Integration with Other Firm Management Instruments

The System of Environmental Management in accordance with ISO 14001:2004 or EMAS standards is not a prerequisite for a voluntary environmental labelling system to be set up; anyway, the presence of one of these standards should facilitate some necessary steps such as the identification and quantification of environmental impacts and the implementation of flowcharts which support the choice, as has been described in the Sects. 9.2.6.1, 9.2.6.2, 9.2.6.4 of these guidelines.

A traceability system, set up following the voluntary ISO 22005:2008 standard, should also be a valid support; it establishes the principles and prerequisites for a food and food chain traceability system whereby companies can follow the course of the materials, identify the necessary documentation for each step of the production and guarantee the coordination and information among insiders.

Finally, within the framework of the modular structure of the POEMS model, here proposed, the guidelines for the specific needs of the organisations and for the aims that they plan to reach, can be easily integrated with one or more company managing systems such as those related to quality (ISO 9001:2008), on-the-job safety (OHSAS, *Occupational Health and Safety Assessment Series,* 18001:2007), ethics (SA, *Social Accountability*, 8000:2008) or food safety (ISO 22000:2005).

If the adoption of the company policy is shared and supported by all the components of the organisation, the starting evaluation of the company, proposed in Sect. 9.2.3, can be done in an integrated way using the managing approach certifications which help view the company from different point of views also including the quality and the safety of the products. The definition of the environmental policy and the idea of adopting a voluntary labelling system can influence the decisions of the management which can then channel all the human, technical and economic resources to build up the common company programmes.

Since the ultimate aim of a voluntary labelling system is to favour the application of all the standards, including legislative obligations, it is possible to integrate the chosen labelling system with other voluntary instruments of environmental policy

already existing within the firm and avoid duplications and overlapping. This can reduce the quantity of paper documents thanks to the adoption of schemes and; consequently, the time need for the internal check by the certification bodies in case this is envisaged. As a consequence, all this leads to the rationalisation of the company behaviour and to the adoption of common policies which optimise the activities and the human resources of the company with the aim of preventing environmental damages within the framework of a synergic vision.

9.2.8.6 Final Recommendations and Constant Improvement

Environmental communication is one of the most important issues that every organisation has to face, with or without an ongoing environmental management system. Environmental communication refers not only the managerial issues but also to the values put into practice by the organisation. In order to guarantee the success of the communication processes, it is important for the organisation to consider itself as a responsible partner inside society and to meet the environmental expectations of the parties concerned.

Since the advantages of the voluntary labelling system are constant, it is important to take a proactive attitude towards environmental problems in order to manage the information more rationally and to tackle the environmental problems which involve the entire community. The community, in fact, is aware of the importance of ecology and it is also aware of the necessity for companies to invest in it to improve their performance. For this reason, internal audits or other monitoring systems which can point out immediately any non-compliances and areas of improvement, should be planned. Moreover, through standard communication channels, it is advisable for the company to disseminate the results achieved, giving information about its environmental performance thus consolidating the awareness of customers and suppliers.

Improvement concerns the achievement of the programmed aims, the satisfaction of the customers and of the other parties concerned, legislative compliance and the assessment of the performance of the products and processes.

9.3 Conclusions

The proposed guidelines have been divided in iterative procedural steps and they adequately support the management in choosing the most suitable environmental labelling for its productive reality. They can communicate to distributors and consumers objective, comparative and believable information about the products and the services which subject the environment to little stress. They can also be adopted by all agri-food companies which can thus obtain a real and competitive advantage, and enhance their continuous improvement of the economic, ecological and social performance.

These guidelines help firms to choose the type of voluntary labelling system among those already existing (which can cause uncertainty and confusion in the markets). They are, at the same time, a valid support for consumers in their attempts to understand better the contents of the messages relating to environmental impacts. Moreover, these guidelines enrich the cultural change process regarding eco-sustainability and the sensitivity of the stakeholders involved in different ways.

As a consequence of these guidelines implemented by the company, a green marketing approach in the product area could promote the integration of environmental issues with all aspects of the corporation's activities, including strategy formulation, planning, construction through production and relations with consumers. Corporations will have to find solutions to environmental challenges opting for the right marketing strategies, products and services in order to remain competitive. Examples of such challenges are: new technologies for handling waste, sewage and air pollution; product standardisation to ensure environmentally safe products; genuine products which help conserve resources; more health protection for workers.

During the evaluation stage this approach encourages manufactures to check suppliers' environmental programmes, require minimal packaging of input and consider sources of material that could be easily replenished or recycled.

During the production stage, SMEs are encouraged to reduce emissions, toxicity and waste and to preserve water and energy. Companies are also encouraged to seek and develop alternative uses for waste products, to revise the manufacturing processes to minimise waste generation, to minimise energy use, and to attempt to find alternatives sources of energy.

During the consumption-usage stage, minimisation of packaging, conservation of energy and minimisation of waste from product maintenance and service are strongly urged; the final stage of a product is its disposal and the label introduces the concepts of re-use and recyclability, in addition to the concept of waste reduction.

The guidelines developed are applicable to all products, in any sector and in the course of any agri-food chain step; they could be useful to develop a framework assessment methodology for food and drink products and to identify suitable voluntary communication tools; they also could be considered the starting point to identify the practical implications of various environmental assessment and information systems because they take into consideration the various environmental aspects and impacts of production and consumption at different stages.

Moreover, these guidelines bear in mind any possible variations in the production approach, the sensivity of the local environment, the type of cultivation and the different environmental labels available to communicate environmental impact.

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