Public Environmental Accounting

The international context, trends and concrete examples

Preface

The Les Eco Maires* association participates in the Life environment CLEAR program. Its mission is to propagate the CLEAR project (see international newsletter), positioning it internationally. This is the intention of this document.

Though this document is surely incomplete and certainly not scientific, we hope it will be part of an attempt to present the trends and orientations found within public administration tools that foster sustainable development as well as a tool to analyse the position of the CLEAR project within this framework.

We begin by defining a series of principles and definitions.
Terms such as «environmental», «social», «policy» and «economic» are often words no longer defined because we suppose everyone attributes them the same meaning.

While this may be true in more established disciplines, it is certainly not so in the young environmental sciences in which every piece of knowledge, every action, and every term take on meaning through the system of relationships in which is placed. In addition, because these relationship systems change quickly (and our way of observing them and recognizing them changes) all of the meanings are in continuous evolution. This means that it becomes essential to understand not only «what» is being done, but, first and foremost, «why» it is being done, i.e. what are the concepts, principles and values on which it is based.

In the environmental field, every point of reference may be (and, in practice, is) interpreted differently. This is why it is that cases that seem to be analogous (everyone claims to be «environmental») start from different assumptions and seek different objectives.

This divergence of contents and aims is especially clear in the area of environmental accounting. From its inception, environmental accounting has contained methodological contortions. It's the attempt to transfer a tool that is in and of itself very well-defined (the accounting technique) into an extremely uncertain realm that is in continuous evolution (environmental management). Therefore, it is logical that in the course of this transfer different components and trends have dominated at different times, including:

- the technical component, the attempt to apply scientific rigor to environmental management
- the economic component, the attempt to keep accounts of actions on the environment and their effects, including in monetary terms
- the political component, to facilitate decisions
- the social component, to spread awareness and responsibility-taking for environmental issues and to promote a redistribution of resources according to principles based on democracy.

The second part of the document delineates the main trends that have guided the most significant cases of the public environmental accounting tried in Europe. The third part proposes a map in which these cases are positioned based on the components that they represent.

* Les Eco Maires is a French national association that groups the mayors of approximately 600 towns which have made environment and sustainable development a priority in orienting their municipal policies.

summary

First part: the dynamics of meanings

1.1 What we mean by «environment»

Any environmental activity or policy is based first and foremost on the concept of environment. Because we have been talking about the environment for several decades, all - especially industry professionals - are convinced that when they use this term its meaning is clear and refers to the same cache of concepts and actions.

This is not the case. The conceptual center of the term has changed considerably in recent decades. Starting from early environmentalism, through the debate about sustainability and then globalization, the very idea of environment has changed its face, has mixed with other ideas and been enriched by complexities. The meanings became layered upon one another and now have been recomposed in an entirely new framework which nonetheless coexists with previous visions in the same political landscape.

Currently there are at least three different scenarios (discussing only the major ones) to which specific concerns and objectives correspond.

We can summarize them as follows.

First scenario: Environment as a collection of natural resources

This was the first conception of environment and the one that is most immediately intuitive.

It came out of certain analyses and observations that were established in the last decades of the 20th-century and have gradually taken on increasing meaning as our ability to observe the worldwide situation in its entirety has expanded. We understood that our planet is a «closed system», with limited resources that have been seriously compromised, that our natural wealth should be preserved as the most precious heritage entrusted to our species, and that to succeed in this, it is indispensable to deeply understand the complex mechanisms that regulate the ecosystem.

Protection policies correspond to this vision of the environment. Institutional bodies and regulatory trends took shape as being specialized in identifying and protecting that to which the term environment referred, i.e. natural resources. The environmental philosophy became a movement and environmentalism was born to defend our natural assets and oppose hasty decisions that compromise the balances of the ecosystem.

Second scenario: Environment as the interaction between natural resources and human activities

This is the conception of environment that has the most of loosely defined boundaries. It came out of a kind of contraction of different disciplines and areas.

The problem is: where does the environmental component begin and end in the different phenomena of the world around us? Which activities affect the environment and in what way? Whose responsibility is it to manage this?

As environmental policies are gradually constructed, a growing controversy was spawned within public and private institutions. The contradiction is clear on a legislative level. The environment becomes pervasive,

developing the tendency to invade and cross into other regulatory areas, and penetrating into the generality of the legal order. Who decides if a processing residue is considered waste? Does the responsibility for a highway lie with the department of public works or the environmental department? Are biotechnologies and GMOs part of health-care or the environment? It is debated and compromises and mediations are found. This scenario corresponds to a more mature stage of the environmental philosophy and a vision of broader scope. To protect natural resources we must address the principal causes of the damage, such as industrial production, services, transportation, infrastructures, etc.

Integrated policies correspond to this scenario of environment. In other words, we try to organize actions such as «Environment and society», «Environment and transportation», «Environment, quality and safety» and so forth. It is as if the environment were bringing other disciplines into a relationship to make them responsible for being aware of the consequences and impact that they may be generating. Other branches of knowledge are trying to reconcile themselves with the environment, supplying themselves with the tools, meters, and specific management controls. In other words, with a toolbox that can provide suitable responses to the challenge.

Third scenario: «Environment» as the collection of all available resources

This is the conception of environment that arises from the concept of sustainability in which environmental, social and economic elements are practically indistinguishable.

We realize that even before developing ecological prescriptions to improve the conservation of natural resources, we need to re-examine the rules of production, market, lifestyle and the structure of political institutions.

The order of priorities is inverted in relationship to the second scenario described above. In the second scenario, the natural environment is still center stage and seeks the components that affect it in other realms, to return to itself and to ensure its own balance. In this scenario, economic and political factors - i.e. the factors that dictate the rules of the game - are put first, attempting to confer them with a balanced system that is compatible with the ecology of nature and society.

This is a decidedly new concept of «environment» which includes all of the available resources without prejudice, whether natural or artificial, as well as considering monetary resources. The environment and its regulatory tools in all of the production and service sectors is tied to the cultural and political criteria that organize our societal life. In practice, this is an environment that is less about pristine nature and gradually comes to overlap with that which we could simply call «the reality that surrounds us».

Policies that are still in development and are not fully structured correspond to this vision of environment. It should be kept in mind that this is not only born out of ideas of sustainability, it is also spurred by the globalization debate. The new environmental philosophy and the criticism of neoliberal globalization take off from the same questions. They share the experience of not yet having a language and a model in which to situate the answers.

This is the most decisive challenge for future.

1.2 What we mean by «environmental accounting»

In this document, environmental accounting means an attempt to use tools for environmental management analogous to those used for the financial management of a company or a public entity.

The regular management mechanism works as follows. As every activity has an economic part, it is held that keeping track of income and expenditures, and recording financial variations, constitutes the most effective way to keep tabs on all actions undertaken, their effects, their effectiveness and their suitability. The balance sheet is the established tool to effect these controls and reviews and also has said the advantage of being a public, transparent document.

Likewise, for environmental management, it is felt that recording all items of environmental expenditure (and any variations of «natural capital») may have the effect of providing clarity and corresponding transparency. Of course, certain considerations must be made. Natural assets must be evaluated through special conventions. To measure the effects of policies implemented, we must evaluate how much the environment is improved or worsened using physical indicators. However, by and large, the accounting structure can be similar to regular balance sheets and it is a tool that works.

However, if we consider the different visions of environment that we have described certain problems arise.

The first and most important problem is: what should be counted? What expenditures and investments should be considered environmental?

If we reference the first scenario described (the environment as a collection of natural resources), we only need to count expenses and investments

connected to protecting natural resources in the area. These include actions of protecting the woods, bodies of water, animals, reducing emissions in the atmosphere, reducing ground pollution and waste reduction.

If we refer to the second scenario (the environment as the interaction between natural resources and human activities) in addition to items considered above, we must evaluate a series of other activities that directly or indirectly work together to create impacts on the environment. For example, expenditures and investments related to transportation, heating, city planning, agriculture and husbandry, propagation of renewable energy, environmental education and so forth, in relationship to how much these expenditures may influence the decrease of environmental impacts.

If we refer to the third scenario (the environment as a collection of all resources available), the accounting system may change radically. An environmental/social balance sheet shows all of the expenditures directed at making the reality of an area more sustainable. Its composition is quite varied because, in addition to the items listed above, investments may appear for such activities as the expansion of public spaces, protecting historical centers, integrating immigrants, facilitating access to education, volunteer work and social solidarity.

The public environmental accounting cases currently being discussed in Europe include some which exclusively pertain to the first scenario and protection policies. There are others that mix elements of the second and third scenarios depending their pertinent cultural framework and the political openness of local institutions.

It is important to clearly distinguish these differing orientations because the possibility of exchanging and transferring cases is closely connected to adopting homogenous methods and visions.

Furthermore, referring to a limited or more extensive field of application for the accounting, changes the political scope of the tool. In one case, only part of the local administration is involved in the process (mainly the environmental department). In the other case, all the administrators are involved as well as the main representatives of businesses and the citizenry.

There's a multitude of concepts involved in the analysis of environmental accounting. In this context, we would like to comment on four terms that cover a very wide semantic spectrum, which are brought into play in every public accounting case and therefore merit some clarification.

Environmental policy. The definition covers all of the activities that a public entity dedicates explicitly and intentionally to the environment. However, it does not by any means establish in which realms these activities are implemented. The term policy indicates that these activities are always the outcome of a plan within the elected assemblies and correspond to an investment and expenditure decision (environmental accounting records the policies only as expenditure flows).

The debate within a public entity about what constitutes an environmental policy experiences the same oscillations in meaning that we discussed above. Depending on the criteria adopted, we can refer to actions of specialized departments or to all of the initiatives that the entity recognizes to be of environmental import.

This is where the explicit use of the term becomes important. That which a town defines as environmental policy corresponds to the outcome of a discussion within the administration. It is an assumption of public responsibility that in some way demonstrates the entity's environmental philosophy, its intent to protect or its commitment in the direction of sustainability.

For this reason, in our analysis, it will be important to recognize as precisely as possible that which the individual cases explicitly define as environmental policy.

Technical tools and procedures. A public entity, unlike a company or a research center, uses a procedure only if it is formally adopted. This has the advantage of establishing the procedure over time but often has the flaw of bureaucratizing the analysis, making it a marginal tool that does not impact the main decisions of the entity.

It is therefore important that the techniques adopted are never seen as ends unto themselves , but as dynamic tools for transformation, primarily intended to open decisions and policies up to discussion.

On the other hand, it is logical, especially in the first stage, that the cases are highly focused on the technical tool in order to evaluate its validity. Therefore, these are cases that should be considered lab tests in which techniques and procedures are experimented with, without bearing important consequences on the political management of the entity.

Economic policies. Environmental accounting describes the efficiency and effectiveness of the environmental activities of an entity starting with the flow of expenditures, and therefore of its economic policies.

It should however be remembered that ordinary economic policies are based exclusively on monetary flows and include both income and expenditures, while environmental economic policies normally evaluate only the expenditures (no one has yet been able to define environmental income in monetary terms) and measure the effects not in monetary terms but through physical performance indicators.

In practice, an environmental economic policy transgresses a majority of the rules of a traditional economic policy in that certain essential elements of the problem cannot be reduced to monetary terms. The same thing can be said for issues pertaining to assets. While a town may easily evaluate the value of its own historical buildings in monetary terms, it cannot do the same for the value of a wooded area or for the value of the availability of a land resource (it becomes even more difficult to evaluate other social performances, such as quality of life, access to information and social solidarity).

The conceptual paradox of environmental accounting lies in the fact that it comes out of economic disciplines and its greatest difficulty is in the relationship with the traditional economic categories. This aspect should not be interpreted as a limit of environmental accounting as much a limit of classical and neo-classical economics, which has not yet managed to achieve, within its syntax, all of the values, both individual and social, that do not correspond to a market price.

Social policies. As we have said, the integration between the environment and social issues corresponds to a more advanced conception of environment within a perspective of sustainable development.

As it stands, there are no environmental accounting cases that consider the entire spectrum of economic, social and environmental activities marked by sustainability. Nonetheless, very often with the cases that appear to be oriented only to a criteria of protection, there are socially-oriented attentions and points of departure that demonstrate that the experimenters have an increased sensitivity.

Therefore, in the cases under consideration, we use the term social policies to indicate the presence of these activities, which are extremely important, though partial.

Second part: the trends

As we have said, no case underway in Europe has been limited strictly to a single frame of reference (in relationship to the meaning of environment) or to a single policy. All mix different elements that are arranged according to the specific identity of each case.

When public entities (cities, districts, and regions) decide to address environmental issues in their local area, they must tangle with a series of very delicate choices. After having clarified in which conceptual and political dimension to operate (according to the variety of scenarios described in the previous chapter), they must decide which tools to use, which is a choice that is also far from simple.

There are a multitude of continuously evolving tools available and have come to constitute a complete toolbox for sustainability in the public entity. They could produce a report on the State of the Environment, and adopt a set of physical indicators to monitor the state of health of local resources, set up a Local Agenda 21 or start procedures for EMAS registration with the resulting institution of a specific Environmental Management System or they could produce an environmental balance sheet of one or more of the entity's activities, and so forth. Importantly, it is possible, as in fact happens in the majority of cases, to simultaneously adopt several tool and integrate them in the most appropriate manner.

Matters are complicated by the fact that these tools correspond each to a specific function while setting general objectives and trying perform the greatest possible number of functions. Therefore, they often work in the same realms with procedures that may be very similar.

Within this state of affairs, environmental accounting has a double role. On one hand, it is a technical tool like others that should be integrated into the entity's general strategies. On the other hand, it can become an element linking economic and environmental management, requiring public administrators to act transparently and environmentally responsibly and taking on a political function that goes quite far beyond the technical instrument.

In this chapter, to provide for a frame of reference on which public entities could draw, we move the discussion beyond environmental accounting and consider all of the main «equipment» for environmental management that is currently available. In conclusion, we will return to a more specific focus on environmental accounting to evaluate its role and the various specific cases in this realm.

We propose a division into four main trends that each correspond to a group of tools.

Regarding the method, we would like to clarify that because, as we have said, the different tools partially overlap and are often used in combination, making it more difficult to identify the specific function of each one, we used arbitrary criteria in the following classification, which is valid only within the framework of this document. We divided the trends based on what we could consider the «immediate priorities» on which each group of tools is focused, while remaining well aware that each methodology also sets itself other, different objectives. This immediate priority is an important requirement because it qualifies the primarily result of each case, to which other aspects of the activity are inevitably sacrificed, less thoroughly examined or simply put off to following stages or tools.

2.1 The technical-management priority

General features

In this trend, tools are included whose primary aim is to improve environmental management by the precise and regulated adoption of **clearly identifiable methods and procedures**. These tools are best defined on a technical level. They come out of a background of cases, present internationally recognized standards and aim to achieve a generality of application which make methodological comparison on a wide scale possible.

Therefore, we can say that, although these tools establish the improvement of environmental policies on different levels, their primary objective is of a technical-management nature in that they entrust the effectiveness of their action to the scrupulous application of provided procedures.

The tools

A primary genre which is strongly promoted by the European Union is that of environmental quality certification, whose most complete and mature expression is **EMAS** registration. In this case, the public entity has to complete a series of steps (which are regulated and reviewed following strict procedures) aimed at building an Environmental Management System that regulates the main identified environmental parameters and results in improvement over time (see Appendix 1). **The Strategic Environmental Evaluation (SEE)** is related to this genre though it has different features. It is a tool developed by the European Commission for assessing plans and program to present for EC financing (see Appendix 1).

The second genre includes **physical indicators of environmental performance**. Environmental management systems, like any other form of control of environmental parameters, requires the use of indicators that are able to reliably showed changes in features of the environment under consideration. The most often used and internationally recognized of these are the **ten European indicators** (see description) to which the ecological footprint, the SIR and **DPSIR** indicators (see Appendix 1) have recently been added.

The third genre of tools, more specifically linked to the accounting aspects, are **NAMEA, the SERIEE, with the EPEA** account (see Appendix 1).

Finally, the development of techniques for joint planning in which realms environmental action should be taken: **Estimate conventions** (see Appendix 1).

2.2 The political/decision-making priority

General features

This area includes tools whose aim is to inform and involve principle political decision makers, increasing their degree of responsibility taking on environmental issues and fostering forms of joint planning that are translated into concrete and explicit actions.

Here too the ultimate aim is to improve environmental policies. However, the immediate objective is to involve political institutions and stakeholders in a binding process subject to citizen assessment. The point of departure is that no local environmental action can be effective if it does not hold administrators accountable.

The tools

The most common types are the tools regulating decision-making and planning procedures of public administrations. There are national or local standards that set precise management responsibilities depending on the size of the entity or in relationship to the primary environmental exigencies. There are also internationally established procedures that provide a system of more structured actions and obligations. The **Local Agenda 21** (see Appendix 1) is clearly the most important and widespread of these tools. In France it has an important variation in the **environment charter** (see Appendix 1).

The role taken on by the **environmental balance sheet** should be considered a separate case when it is subjected to a process of formal approval. In this case (represented in large part by CLEAR), balance sheet does not count so much as an accounting tool as standards binding the environmental policies practiced by the entity.

2.3 The accounting/economic priority

General features

This area includes tools aimed at identifying with as much clarity as possible, economic flows related to environmental activities (primarily of environmental protection) in order to identify the relationship between expenditures and the results achieved and optimize investments ecoefficiently. The assumption is that it is essential to economically quantify environmental factors (normally not considered because difficult to monetize), as well as recognizing that the actual cost of environmental protection can constitute an effective stimulus to reducing negative impacts on the environment.

The tools

It is in fact very difficult to identify a homogenous group of tools in this area. They range from partial forms of accounting or accounting that is barely integrated with the entity's main economic flows to complete internationally-standardized accounting structures.

For the latter group, we will wait for the next chapter for further discussion focused on cases of environmental accounting and environmental balance sheets.

As for the partial accounting formulas, for simplicity's sake, we summarize them under the title **Environmental Accounts and Expenditures** (see Appendix 1).

2.4 The social information priority

General features

This area includes tools whose primary aim is to inform and involve local communities to improve individual behaviors related to the environment and to develop a culture of sustainability. Environmental issues often interweave with social, cultural and ethical issues. Therefore, it is held that environmental actions achieve optimal effectiveness when they are interpreted directly by citizens through principles of cooperation and solidarity.

The tools

We should first distinguish two groups of tools: those intended to promote effective redistribution of environmental resources, fostering the direct participation and basic democratic mechanisms, and tools that are primarily oriented to promoting awareness and responsibility-taking on environmental issues so that ultimately citizens are made key players in the changes required to transition to sustainability.

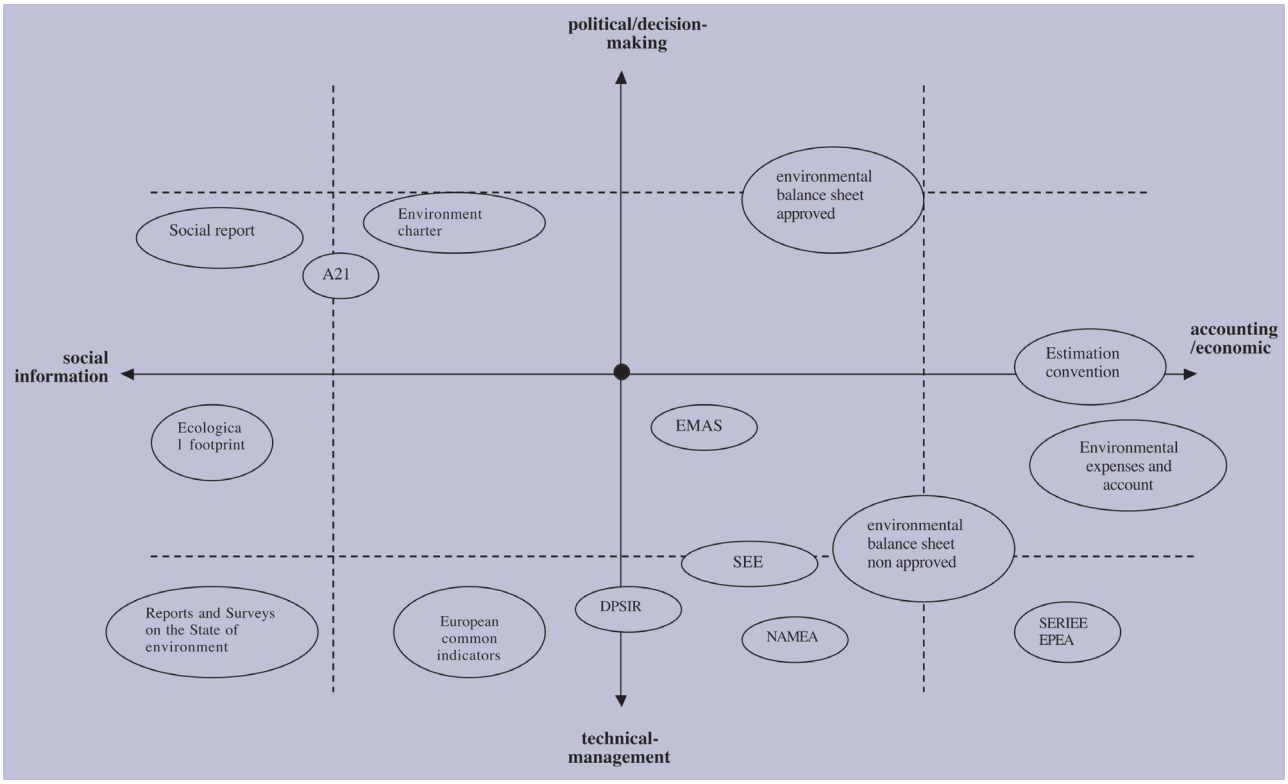
In practice, the first group includes individual initiatives, case studies, association activities while not offering full-fledged tools, i.e. clear and defined methodologies that can be adopted by public entities, with the possible exception of **the social balance sheet** -which has now been sufficiently defined - though practiced up to now primarily by businesses (see Appendix 1).

The second group of tools are oriented towards constructing widespread environmental awareness and includes diverse methodologies practiced for some time. From a certain point of view, the tools that we've listed up to now include actions and criteria of communication and education (such as in the case of the «environmental statement» required by EMAS). In this context, we would like to note two cases that could be considered effectively dedicated to this end.

The first is the **ecological footprint** that measures the environmental impact of the consumption of a community through a dramatically effective indicator. Recently, the European Commission sought to support it by adding it to its list of ten official indicators (see Appendix 1).

The second consists of a family of various Reports and Surveys on the State of Environment. When these documents are made public they play a dual function of informing the population and organizing an initial systematic framework of the main environmental parameters of the area under consideration (see Appendix 1).

You will find herewith a diagram of synthesis presenting these various instruments in comparison with the tendencies which we defined.



THIRD PART

Practices of environmental accounting through some representative cases

The objective of any accounting system is to draw up a balance sheet, i.e. an integrated system of interpretation that provides a complete portrait of all the economic and financial flows and their relationships to one another, as well as a statement of assets and liabilities.

Environmental accounting systems are attempts to achieve a similar result, although with adaptations and mediations that come from the fact that the environment, as noted, is not easily translated into terms of money or assets.

The methodology challenge - which seems quite daunting - of building an environmental accounting or balance sheet for a public entity equals the challenge of trying, through this particular representation of issues, to provide public decision-makers with information and clarifying elements that allow them to «manage» the environment in their local area with greater awareness, implementing strategies, programs and specific policies.

The core of this challenge is «how to represent it», i.e. how to make the sometimes acrobatic contortions which accounting performs to adapt to this unusual concept and still be clear and effective.

In effect, as we emphasized, the environmental system offers a scenario that inverts the organization of traditional economics and presents some considerable hurdles.

- First of all, the fact that the statement of assets and liabilities for the environment - though clearly an important element - cannot be successfully assessed. In this case, the initial assets are a collection of resources that come free to our species and are redistributed over time according to the vicissitudes of public and private powers. At this point, there are no parameters that make it possible to translate the value of a forest or a river or clean air into monetary terms (some attempts are underway, but they still have an entirely experimental nature). Therefore, as it stands, even the most developed of environmental accounting cases are not able to offer a statement of profits and losses in monetary terms.
- Then, there's the problem of the double entry. What is the income that goes to balance out the investments and expenditures? Given the impossibility, in this case as well, of monetizing the effects achieved, the most practical solution is to assess the results through physical indicators.

If in a certain year, a specific investment increased the public green area within a city by 3%, the following years we can compare investments and result in the same realm to evaluate if the projects were just as effective. Of course, this is not a precise process (the relationship is too mechanical in relationship to the variables involved), but it nonetheless helps thinking and decision-making.

- Finally, there's the problem of collecting and reclassifying data. Beyond the question of «what to count» discussed above, there are still numerous problems after having decided the area be analyzed and reported. The first problem lies in the fact that the necessary data come from several departments, which often do not relate to one another and it's easy to lose some elements on the way. Then there's the problem of the companies that manage services (waste disposal, water, energy, etc.) which are often separate companies whose balance sheets have to be integrated with those of the city government. Finally, there's the issue of how to reclassify expenditures coming out of different areas, grouping them in a way that makes it easier to interpret their scope and development over time.

That said, it is easy to understand that environmental accounting does not correspond to a definite model and it takes on different features and characteristics depending on the context in which it is applied. Unlike other tools described in the previous chapter, public environmental accounting is a «chameleon tool» that is able to change its form and function depending on the needs of the administration that uses it.

For this reason, in this document, we did not feel it would be appropriate to attempt general definitions which would not fit the mobility of this subject matter. Instead we drew up a small inventory of representative cases which together can tell of the variety of solutions that are currently available.

We are documenting the following cases:

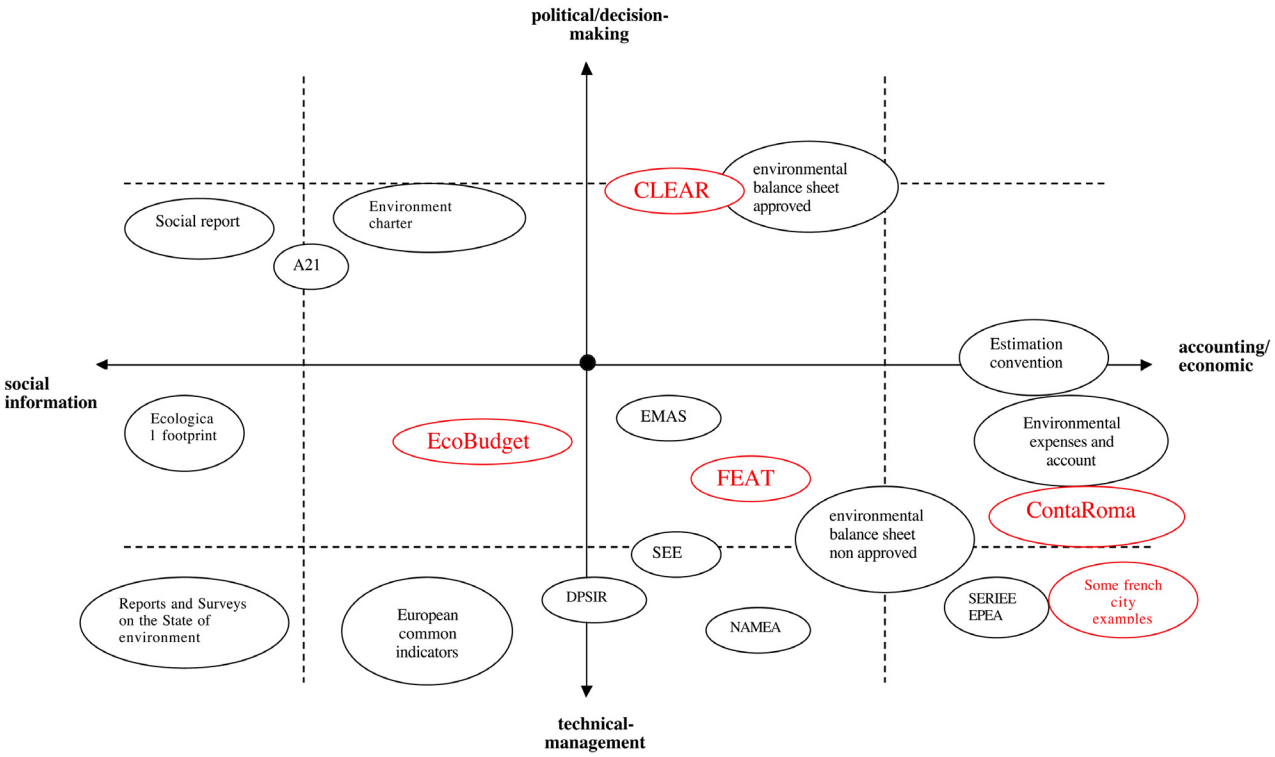
- European ecoBUDGET(see Appendix 2);
- Indicators of quality of life in Bristol (see Appendix 2) ;
- CLEAR (City and Local Environmental Accounting and Reporting) (see Appendix 2) ;
- Contaroma (see Appendix 2);
- FEAT (For an Environmental Accounting Tool) (see Appendix 2).

Within these cases, special attention has been given to the CLEAR project developed in Italy both because Les Eco Maires is a partner of this project and because the CLEAR project now represents the most wide-ranging case in Europe that has been translated into concrete actions within local policies. A separate publication (an international newsletter) has been dedicated to the project, documenting the methods and results of the work in detail.

As we will see, the cases that we present proposed solutions and «inventions» that differ greatly from one another. There are those who carry out an analytical study as a preliminary to administration involvement (such as the French case FEAT), those who focus on direct political action (such as CLEAR) and those (such as EcoBudget) that propose a balance sheet formula based exclusively on physical counts, excluding the monetary aspects, while also involving the administration and achieving the defined objectives.

We are providing a diagram to facilitate comprehension of this mosaic in which the cases are placed in a position that we felt was the most representative in relationship to their orientation and their priorities.

We hope that our proposed interpretation - arbitrary as any representation that tries to interpret a complex reality - helps contextualize the cases, facilitating discussion to promote new explorations and new perspectives for an increasingly wide-ranging use of environmental accounting.



APPENDIX 1

EMAS

The «Eco-Management and Audit Scheme», or EMAS, is a management tool for organisations (enterprises and local authorities) for evaluating, reporting on and improving their environmental performances.

The EMAS system can help local authorities by offering them a structured framework for controlling and improving the quality of their environment. Today an increasing number of public services are trying to obtain EMAS registration. There are more than 100 in the following member states: Austria, Belgium, Germany, Denmark, Spain, France, Italy, Sweden and the United Kingdom.

To receive EMAS registration, an organisation should comply with the following stages:

1. define an environmental policy
2. realise an environmental analysis. The organisations have to draw up a complete statement of the impacts and the results obtained in a number of areas such as water, air, noise, waste, energy consumption etc
3. establish an environmental programme
4. put an environmental management system in place
5. carry out an environmental audit
6. draw up an environmental declaration
7. environmental conformation. The accredited auditor examines the approach and the environmental declaration to ensure the regulations have been respected and then approves the registration of the organisation. The organisation has to maintain its performance in relation to the environment otherwise its EMAS certification will be withdrawn.
8. the declaration is addressed to the competent site registration organisation, which gives or refuses agreement.

With the new regulations (EMAS II), the application of EMAS has been extended from industrial activities to all the organisation's sectors of activity.

The European EMAS regulations are set at a higher level than ISO 14001 certification with the addition of the obligation for the organisation to inform the public by publishing an environmental declaration.

THE STRATEGIC ENVIRONMENTAL EVALUATION (SEE)

The Strategic Environmental Evaluation is a tool fine-tuned by the European Commission for the ecological evaluation of the plans and programs to present for Communitarian financing.

The promotion of the harmonious, balanced and sustainable development of economic activities and a high level of environmental protection and the improvement of the latter figure in the Amsterdam Treaty among the objectives of the Union and the tasks of the Community. In this way, environmental subjects assumed a primary value and a character of absolute transversality across the various investment sectors that are the object of the development plans implemented by Communitarian policies, with particular reference to the programming of structural funds and with the precise intent of defining sectorial and territorial strategies capable of promoting truly sustainable development.

The final purpose of the SEE is the verification of the correspondence of the sustainable development plans by evaluating their total environmental impact, i.e., their direct effect on the quality of the environment.

The SEE is articulated into an ex ante, intermediate and ex post evaluation.

The ex ante evaluation precedes and accompanies the definition of the operational plans and programs, of which it is an integral part. The intermediate evaluation takes into consideration the initial results of the interventions, their coherence with the ex ante evaluation, the pertinence of the objects and their degree of attainment. The ex post evaluation is intended to illustrate the use of resources, the efficacy and efficiency of the interventions and their impact and coherence with the ex ante evaluation. In practice, the SEE ensures the integration of the environmental objectives into the context of the development plans and programs to be submitted for financing by the EU. These objectives must be explained and their pursuit needs to be monitored through the use of DPSIR-type status and performance indicators.

These are the 10 key criteria for sustainability that are used in the SEE: Examples of priority sectors for structural funds

SEE criteria	
Energy, Transportation and Industry	1. Reduce the use of non-renewable energy resources to a minimum
Energy, Agriculture, Forestry, Tourism, Water resources, Environment, Transportation and Industry	2. The use of renewable resources within the limits of their capacity for regeneration
Industry, Energy, Agriculture, Water resources and Environment	3. Correct use and management, from an environmental point of view, hazardous and dangerous substances and waste
Industry, Energy, Agriculture, Water resources and Environment	4. Preserve and improve the state of wild fauna and flora, habitats and landscapes
Agriculture, Forestry, Water Resources, Environment, Industry, Tourism and Cultural Resources	5. Preserve and improve the quality of soil and water resources
Tourism, Environmental, Industry, Transportation, Cultural Resources	6. Preserve and improve the quality of historic and cultural resources
Urban Environment, Industry, Tourism, Transportation, Energy, Water Resources and Cultural Resources	7. Preserve and improve the quality of the local environment
Transport, Energy and Industry	8. Protection of the atmosphere (global warming)
Research, Environment, Tourism and Cultural Resources	9. To provide greater sensitization to environmental problems, and develop teaching and training in the field of the environment
All	10. Promote the participation of the public in decisions that involve sustainable development

EUROPEAN COMMON INDICATORS

Through a work group that included the participation of experts from member countries with a contribution from the European Agency for the Environment, the European Commission has fine-tuned a set of indicators designed to monitor the orientation of cities towards sustainability.

It has to do with 5 required indicators (1-5) and 5 optional indicators (6-10), to which the Ecological Imprint has recently been added. The initiative is called «Towards a local sustainability profile - European common indicators.»

The campaign for their adoption anticipates that the municipality will join a test group.

Summary table of the 10 indicators
(Each indicator is labelled with the principles of sustainability of reference)

			principles					
No.		**Indicator**	**1**	**2**	**3**	**4**	**5**	**6**
A 1	Required	Citizen satisfaction with reference to the local community Citizen satisfaction (in general and with reference to specific characteristics of the Municipality of residence)	x	x		x	x	x
A 2	Required	Local contribution to global climate change Equivalent CO2 emissions (absolute values and changes over time)	x		x	x	x	
A 3	Required	Local mobility and passenger transportation No. of trips, time and mode of transportation used, distances travelled	x		x	x	x	x
A 4	Required	Accessibility of green areas and local services Distance of citizens from green areas (parks, gardens, open spaces, equipment, useable private green areas, etc) and from basic services (bathrooms, transportation, instruction, food, etc.)	x		x		x	x
A 5	Required	Quality of the local air Number of times limit values are exceeded Existence and implementation of reclamation plans	x				x	x
B6	Optional	Children's home – school trips Transportation method used by children to go from home to school and vice versa	x		x	x	x	
B7	Optional	Sustainable management by local authorities and local businesses Share of public and private organizations that have adopted and make use of procedures for environmental and social management			x	x	x	
B8	Optional	Noise pollution Portion of the population exposed to high noise levels over the long-term or noise levels in defined areas; Existence and implementation of reclamation plans	x				x	x
B9	Optional	Sustainable use of the territory Artificially covered surfaces; Abandoned or contaminated terrain; Intensity of use; New development; Territorial restoration	x		x		x	x
B10	Optional	Sustainable products Local consumption of products provided with eco-labels or certified as organic or energy efficient or coming from sustainable forest management or fair trade; The offerings of such products on local markets.	x		x	x	x	

Principles of sustainability on the basis of the selection of indicators

1. Equality and social inclusion (access to adequate and affordable basic services for all)
2. Participation/democracy (participation by all sectors of the local community in decision-making processes)
3. Relationship between the local and global dimensions (satisfaction of needs at a local level or, at any rate, in a more sustainable manner)
4. Local economy (promoting employment and business in ways that threaten natural resources and the environment in a minimal measure)
5. Environmental protection (ecosystemic approach; minimization of the use of natural resources and the territory and the production of waste and polluting substances; increasing biodiversity)
6. The cultural patrimony/quality of the built-up environment (protection, preservation and reclamation of historic, cultural and architectural values; increasing and safeguarding the beauty and functionality of spaces and buildings)

DRIVING FORCES, PRESSURES, STATE, IMPACT, RESPONSES (DPSIR)

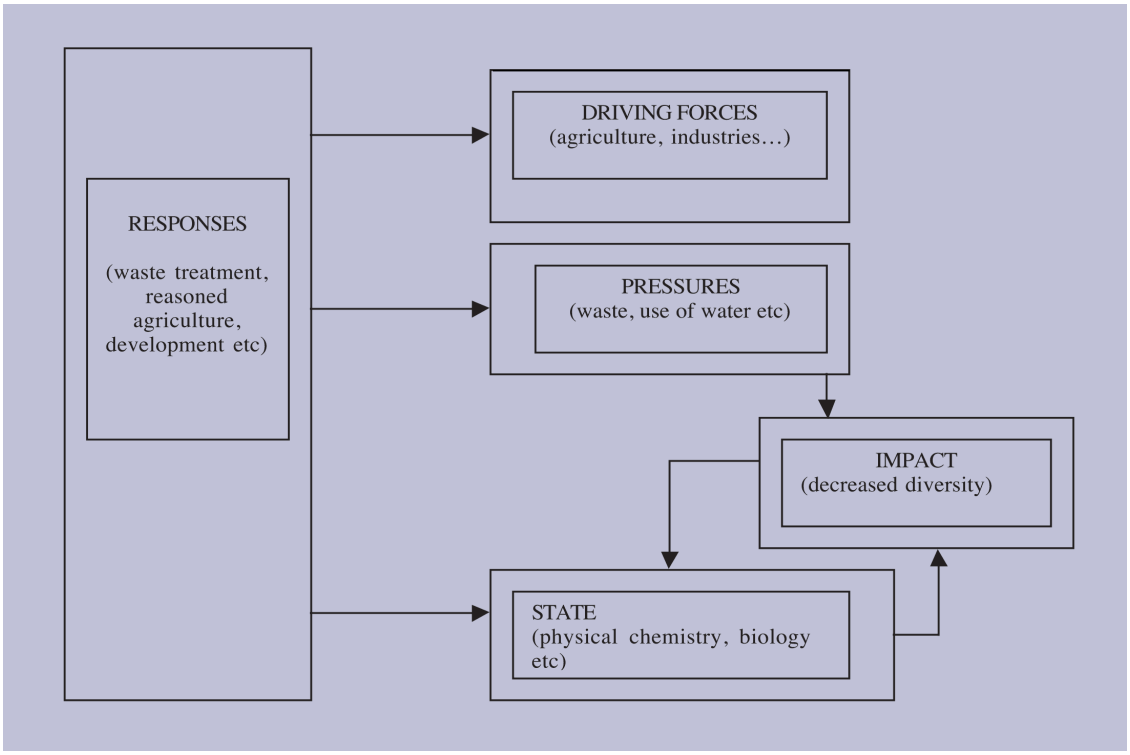
The DPSIR model (Driving Forces, Pressures, State, Impact, Responses) was drawn up by the OECD and is made up as follows:

- Driving Forces, which bring together the economic players and the associated activities, not necessarily trade: agriculture, population, industrial activities etc. These Driving Forces represent the fundamental causes of the pressures.
- Pressures, which are the result of the Driving Forces (waste, water use, making aquatic habitats artificial, fish catches etc) and are the cause of a change of state in space or time.
- State, which describes the environment: concentration of different variables in the physical chemistry, fish stocks.
- Impacts, which represent the consequences of the Pressures and the Responses on the environments: increases in phosphorus concentrations, loss of biological diversity.
- The Responses, which are the different corrective actions undertaken that may have influence one or other of the inputs into the model, whether on Pressures (e.g. a purification plant to reduce pollution) or on Driving Forces (e.g. development in the area).

In the case for example of polluting emissions, the Driving Forces may be represented by the agricultural practice of spreading fertilisers, Pressures by the quantity of nitrates added to the environment, State being the recipient environment (e.g. area of eutrophication in water courses, nitrate concentration), Impact being the consequences of the pressure (e.g. the loss of amenity of a water course, increase in nitrate levels) and Responses being the corrective measures implemented (e.g. changing the product labelling to reduce the permitted amounts for use, installing aeration in a lake).

Source: Ministry of Ecology and Sustainable Development

The interactions between the various parts in this are shown below:



SERIEE/EPEA ET NAMEA

SERIEE (European System for the Collection of Economic Information on the Environment), set up by the European Statistical Office, EUROSTAT, is a system of satellite accounts. It is made up of a series of environment satellite accounts, making the appropriate link between economic statistics and the national accounting system.

The environment satellite accounts show the expenditure necessary to accomplish certain social functions, not only in relation to the environment but also in training, health, social security etc.

The system adds information on non monetary data and monetary data that falls outside national accounting systems to the conventional national accounting information.

The SERIEE satellite accounts establish a connection between environmental problems and environmental statistics. At the present stage of development, the system puts the emphasis on environmental protection expenditure.

The main objectives of SERIEE are to:

- locate monetary flows related to the protection of the environment
- identify the players that create the expenses related to the protection of the environment
- evaluate the impact of environmental protection measures on the economic system (positive effects generated by the development of economic activities introduced by environmental protection, negative effects due to the increase in costs).

The system consists of four modules: the satellite account for environmental protection expenses (EPEA), the satellite account for the use and management of natural resources, the registration system for eco-industries and the input/output analysis of environmental protection activities.

The **EPEA -Environmental Protection Expenditures Account**- is the only module for which a specific methodology has been developed that, based on the principle of the functionality of the expense, defines an «expense for environmental protection» as an expense incurred for an activity whose principal purpose is the prevention, reduction and elimination of pollution and every other cause of environmental degradation.

To facilitate the identification of the characteristic activities intended for environmental protection, they have been classified in the CEPA (Classification of Environmental Protection Activities) in the context of the following environmental «domains»: pollution of the atmosphere, water and soil, waste, noise and vibration, degradation of biodiversity and the landscape and radiation.

The CEPA provides 9 items: the first seven correspond to the above-mentioned domains, while the last two are represented by research and development and other environmental protection activities. Each of them has sub-items, based on the characteristics of the various activities.

NAMEA (National Accounts Matrix including Environmental Accounts) was invented by the Netherlands Statistics Institute. It is a conventional national accounting matrix extended with environmental accounts. The NAMEA system completes a series of basic economic aggregates with 5 global environmental indicators. In the Netherlands, the national accounts at present include not only the economic accounts and conventional indicators, but also the Social Accounting Matrix (SAM) and an integrated environmental accounts system. The Netherlands thus measures the relative damage caused to the environment by the major sectors in the economy (primary, secondary, tertiary) from the point of view of the major environmental problems existing in the country. For example, it was discovered that for every final demand unit, agriculture polluted three times more than the national average, the multiplier being 1.7 for industry and 0.45 for services.

ESTIMATION CONVENTIONS

The legitimacy of approximation and good sense, but on the condition that both are explicitly declared and validated by bringing the principal implied interpreters in concert.

This is the meaning of the so-called «estimation conventions.»

In fact, by this formula is meant all operations with which one attempts to attribute a value (to an activity or a resource) in the absence of other useable objective criteria. In other terms, when there is no «scientific» method available for accounting for an environmental value, a criterion is agreed upon by convention, which may not be entirely rigorous but at least represent the best possible approximation and, most of all, becomes a standard that can be quantified, accounted for and evaluated over time.

The advantages are obvious: on the one hand, it is possible to account for phenomena that otherwise could not be entered into the balance sheet; and, on the other hand, the convention promotes coordination among the parties and encourages comparison procedures and in-depth analyses that can be improved in the future.

The estimate conventions can be used to evaluate the entity of the natural patrimony, environmental activities or those that present environment components that are difficult to identify; and it is especially in this latter case that they prove to be the most useful.

We are accustomed to identify a certain action as «environmental» or «non-environmental» based on its proximity to the causal nexus between that action and a recognizable environmental effect. If the causal relationship is direct (polluting discharges make the water undrinkable) the action is identified (limiting discharges is a protective environmental action). If, on the other hand, it is more indirect (atmospheric pollution increases respiratory diseases) one makes a greater effort to trace the connection and tends to consider the problems and relative costs separately.

In realty, even an indirect relationship can be very important and a careful analysis could recommend an intervention at an environmental level to contain several social, health and economic penalties being paid by the resident population. So, could you then say that there is an environmental share in the health costs incurred by an authority? Or, reciprocally, that an environmental investment to limit atmospheric emissions will produce savings of health costs? And what are these shares? How do you compute the environmental effect of education, translated into more sustainable behaviours and, as a consequence, in a reduction of costs deriving from negative impacts? Is there an environmental component in urban planning? And how large?

It is to these types of questions that estimate conventions provide an answer. Case by case, the selection of the formulas applied must be the result of coordination and a critical calibration of the accounting tool in the territory of reference.

The best documented case of an estimate convention was developed within one of the pilot accounting projects conducted by the Municipalities of Amiens, Nantes, Lione and Poitiers, in the context of a research program promoted by the French Ministry of the Environment.

In particular, an attempt was made to provide an accounting definition of the environmental component of public transportation. The reasoning was developed through the following steps:

- First hypothesis: to consider as an environmental component, within the total costs incurred for public transportation, only the share referable to openly environmental technical decisions (the introduction of electric, LPG or natural gas vehicles).

This scheme is easy to apply but does not take into account one of the principal environmental objectives of public transportation, which is to replace or limit the use of private vehicles.

- Second hypothesis: to assimilate all expenses incurred for the environment in the context of transport into the operating deficit.

This solution (in addition to not solving the problem of which costs to evaluate) involves political risks, inasmuch as it does not show the connection between environmental investments and efficiency of service and could legitimise less sustainable «cost-saving» measures.

- Third hypothesis: derive the environmental component from an analysis of the users of public transportation. Two groups are considered: basic users (those who, for socio-economic reasons, could not do without public transportation in any event) and «freed-up» users (i.e., those who have an alternative means of transport but choose public transportation, anyway). The environmental component thus corresponds to the costs attributed to the freed-up users.

Although not entirely satisfying, this convention was adopted because it has the advantage of highlighting a general strategic element of transportation policy and allows evaluating its evolution over time.

AGENDA 21

Local Agenda 21 is a tool that allows coherent and harmonised economic, social and environmental policies to be drawn up by local authorities for a given area. It is a practical strategic document for the long term. It provides the framework for the community's sustainable development policy.

A local Agenda 21 is made up of a diagnosis, highlighting the issues for the area and a programme of actions, reflecting the objectives and strategy set by the local authority. It is subject to regular evaluation. This project comes out of a wide ranging debate, organised within each area.

Depending on the country, Agenda 21 can be used either as a restricting instrument or as an instrument for orientating public policies.

ENVIRONMENT CHARTER

A charter is an incentive and voluntary based approach

«An environment charter is the contractual document through which a local authority commits itself, with the Ministry of the Environment, to improve the environment and the quality of life in its area.» (Ministry of the Environment Circular 11 May 1994).

The objective of a charter is to strengthen the environmental assets and correct the environmental weaknesses of an area. It thus allows local authorities to organise and optimise their intervention policies. A charter acts as a tool that the local authority is able to use to establish coherent local environmental policies for sustainable development. The charter can relate to any type of area, urban or rural, a community, a group of communities, a region or a department.

A charter relies on a process of interaction and negotiation between a variety of different contributors, called governance. It involves participation, negotiation and co-ordination.

A vehicle for spreading sustainable development

A charter aims to put into practice the principles of sustainable development that were approved by France during the United Nations Conference on the Environment and Development held in Rio. It is a real vehicle for sustainable development, as it obliges all the players to work towards common objectives as well as providing a place for special discussions on sustainable development. The charter allows the link to be made between the environment, social issues and the economy.

The concept of sustainable development is summarised in the charter policy by the three principles of democracy, social equity and ecological solidarity.

In 2002, 90 charters were signed (38 community charters, 34 charters relating to groups of communities and 13 charters covering departments).

Excluding the departments, 17 charters were implemented in areas with over 100,000 inhabitants, 14 with between 50 and 100,000, 21 with between 10 and 50,000 and 11 with less than 10,000. Around 50 charters are in the draft stage.

19 regions have registered them in the «State-Region Plan Contracts».

A methodology

It is based on a prior diagnosis designed to evaluate local authority policy in relation to sustainable development principles with the goal of planning its environmental projects and actions (over 5 years) and evaluating them. It thus allows both the sectorial policies of the signatory local authority to be completely reviewed and the long term development of its area to be planned. It is thus a tool that ensures the coherence of public policies and above all a tool that ensures the environmental policy being pursued is clear.

Like the implementation of the charter, its elaboration is accompanied by a democratic process. It demands proper consultation between all the players (public, private, institutional, associative and individual).

A flexible mechanism

The approach is based on simple methodological principles allowing it to be transposed to any type of area. Its simplicity means it can be adapted to the wide variety of local situations and conditions encountered. It is drawn up for a particular site and is «made to measure».

A voluntary approach

In order to make the charter a success, the elected representatives have to be fully committed and services previously defined (by this term we mean: who does what and who decides). It is essential for the success of the approach.

ENVIRONMENTAL EXPENSES AND ACCOUNTS

We consider under this heading all the documents in which an analysis of the principal activities for the protection of the environment is associated with an explicit indication of the costs sustained for the activities themselves.

(A note: it should be kept in mind that in some cases the term «Environmental accounts» refers exclusively to the description of physical parameters, while the monetary aspects are described in the so-called «Environmental expenses»)

It often has to do with disaggregated documents (even if produced within the same administration), that arise from different circumstances and needs and provide a picture of environmental economic trends that we can define as «the leopard's spots.»

Nevertheless, they constitute an initial and precious foundation without which it would not be possible to arrive at more structured documents, such as those needed for the drafting of a true and proper accounting or an environmental balance sheet.

Moreover, the drafting of these initial analyses requires, at any rate, a comparison between different competencies within an administration (or, at least, a dialogue between environmental and administrative offices) and, as a consequence, promotes an integration of roles and knowledge that, even if partial, represents the premise and stimulus for an important evolution of the authority's environmental culture.

Generally, environmental accounts and expenses only take into consideration those activities that the authority recognizes as «environmental» inasmuch as they correspond to the specific competencies of its own offices. As a consequence, these documents fall, for the most part, within that which we have indicated as the first, and more restrictive, definition of environment.

THE SOCIAL REPORT

The social report of Local Bodies is arousing growing interest as an instrument for reporting on the benefits produced by the Body in order to increase the transparency of processes and of relations with citizens, to communicate the results of government action more effectively, and to plan for future choices.

The social report is a report instrument with which it is possible to show citizens the administration's political objectives and the results achieved. It highlights the outcomes of activities which are carried out every day, and which would otherwise go unnoticed.

The social report is an instrument of transparency. Many Municipal Mayors who have adopted the social report have highlighted how it is possible with this instrument to make the Body's activity transparent. Through annual reports that show the activities and effects produced by these activities, citizens' control also increases.

The social report is an instrument for planning which makes it possible to integrate valuations relating to stakeholders' expectations within the Body's decision-making process. In fact, the social report, when fully implemented, goes alongside the ordinary financial report, completing it and following its procedural stages of discussion and approval.

The social report is finally an instrument of communication, which makes it possible to draw attention to the numerous activities carried out by the administration.

The Local Agenda 21 process set up by you has allowed, or will allow, for the definition of a local action plan shared with the external stakeholders.

The social report can represent a moment of annual assessment of the achievement of the undertakings set out by the Body within the local action plan.

ECOLOGICAL FOOTPRINT

An ecological footprint is a measure of the pressure mankind exercises on nature. It is a tool that evaluates the productive surface necessary for a population to provide for its consumption of resources and its need to assimilate waste.

Imagine you are a Robinson Crusoe isolated on a desert island: what should the size of your island be (land, lagoon and accessible sea included) to allow you to have a sustainable self sufficient life, providing for your needs for food, heating, building materials, pure air, drinking water and waste absorption?

This surface represents our Robinson Crusoe's ecological footprint. We intuitively understand that if the way of life of our castaway exercises too great a pressure on his island (if for example he has huge campfires every night to cope with his loneliness), that is if his ecological footprint is larger than his island, his survival is sooner or later likely to be compromised...

On a world scale, humanity's ecological footprint is an estimation of the area of biologically productive land or sea that is necessary to fulfil all our needs.

According to the WWF's «Living Planet Report 2002», the global ecological footprint of humanity has nearly doubled in the course of the last 35 years, and exceeds the biological capacity of the earth by 20%. This study also highlights the profound ecological disparities between countries : the footprint per person in high income countries is on average six times higher than that in low income countries.

To put it plainly, we are over-consuming the available planetary resources and are gravely threatening future generations;

We are like a family that mortgages its home, a logger that exploits his forest beyond its capacity to regenerate or an enterprise that draws on its capital to cope with its expenses.

Source: WWF France.

REPORTS AND STATEMENTS ON THE STATE OF THE ENVIRONMENT

This heading includes all the documents through which a local authority presents a precise and detailed picture of the degree of integrity or level of compromise of the environmental resources in its own territory.

These reports and statements are not tied to any fixed model from international institutions and have found their own standard by convention over time, developed through the stratification of experiences. Today, the best drafted documents take into account several basic criteria:

- To use a set of indicators that conform to models that have been previously published and put into practice, so that the environmental performance documented can be compared to that of other territories. One of the most used models is the DPSIR.
- To identify, from among the physical indicators, those that best correspond to the territory's dimensional, urban and social characteristics.
- To use the document as an internal communications tool within the administration, involving the various offices and services in periodic discussions on environmental themes.
- And, finally, to use the document as a tool for informing and sensitising the citizenry and a broader public.

One problem that is key to the drafting of these documents is the question of the sources and quality of information: in the majority of cases, the information available is not homogeneous from either a technical or temporal point of view. For this reason, the picture that emerges is often more intuitive than rigorous.

This notwithstanding, the Reports and Statements constitute an important basis for opening a discussion, extended to the entire citizenry, which will allow evaluating and reorienting sectorial policies.

APPENDIX 2

EUROPEAN ECOBUDGET

Partners of the project

Municipality of Växjö (Sweden)
Municipality of Bologna (Italy)
Municipality of Ferrara (Italy)
Municipality of Amaroussion (Greece)
Municipality of Kalithea (Greece)
District Council of Lewes (United Kingdom)
City of Dresden (Germany)
City of Heidelberg (Germany)
ARPA Emilia-Romagna (Regional Agency for the Protection of the Environment) (Italy)

ICLEI Europe (sub-contractor)

Objectives

To implement the ICLEI's environmental management system ecoBUDGET in six different European municipalities, keeping into account the different cultural, economic, administrative, environmental contexts.

Stages of the project

1. Preparation of the project (6 months)
2. Preparation of the local environmental budgets (6 months)
3. Implementation of the local environmental budgets (12 months)
4. Budget balances and local evaluation (6 months)
5. Evaluation of the project (6 months)

What is being quantified: it is the question about of the physical and monetary accounts;

The goal of ecoBUDGET is to become the political framework for directing local communities and their authorities towards sustainable development.

During the last two decades, environmental professionals have adopted several financial terms and expressions. Auditing, reporting, controlling, account management, balancing and planning are terms that have appeared not only in the financial context, but also in relation to environmental protection. However, one crucial component of financial management, the budget, has not yet been transferred to the field of environmental protection and resource management. This is what ecoBUDGET does. By duplicating the cyclic approach of the financial budgeting and by inheriting some of its terminology, politicians and senior urban managers will find ecoBUDGET easy to understand and integrate in their everyday work. But contrary to the financial budget, ecoBUDGET does not entail placing a monetary value on the environment nor does ecoBUDGET attempt to express impacts on the environment in monetary terms. Instead, ecoBUDGET uses physical, quantitative environmental indicators to present local environmental targets and the state of the local environment in relation to these targets.

The principle of economic efficiency is directly comparable with ecological efficiency. This means that resources have to be used in a way to achieve maximum benefit. Financial retrenchment can be translated to the principle of ecological sufficiency, meaning there should only be environmental spending where it is really necessary, and degrading of resources should be avoided where possible. A guiding principle in financial budgeting is to avoid overspending. This is the challenge for the use of natural resources too: the burden of environmental debts should not be placed on future generations.

Although budgeting systems differ from country to country, most share some basic characteristics. The main characteristic, which is universal, is the annual or bi-annual repetition of the budget cycle. ecoBUDGET follows the same principles as the financial budget, i.e. the environmental budget cycle starts with a pre-report developed by the environmental unit or department. The environmental committee as well as the local community discuss the draft budget, which can then be changed according to political or community priorities. The environmental master budget is then voted and adopted by the city council. The targets (budget values) thus become politically binding, giving the mandate to the local administration to engage measures to meet those targets. Normally the budget also describes who is responsible for which part of the budget, i.e. targets and the measures. To monitor and control the budget, accounts are set up in order to register the environmental spending and to compare that with the available environmental resources.

Who qualifies for the study: who is in the field of study (a territory, a department...);

ecoBUDGET deals always with the whole administrative territory interested, be it a municipality, a county or a region, including all the operations taking place in it, either by the local authority and by all the other stakeholders.

In the case of our project the six administrative territories of Växjö, Bologna, Ferrara, Kalithea, Amaroussion and Lewes are involved.

How do we quantify: it is the question about the means and the methods of quantification;

As mentioned before, ecoBUDGET does not try to give a monetary value to environmental, or social, resources. Instead the resources are accounted for through physical environmental indicators, which of course can be linked to the financial budget and its accounts. Though the value for money can not be quantified so far, some aspects are to be mentioned: As the strong relationship between ecology and economy is nowadays widely acknowledged, all the environmental management systems show a clear intention to curb the financial expenses, mainly remediation activities. Financial considerations are present in Environmental Impact Assessment, Strategic Environmental Assessment, EMAS, ISO 1400, Environmental Accounting and so on. ecoBUDGET too, even not using directly monetary calculation, can be a great help for a better management of human, natural and financial resources in a local authority. In particular the mid-term perspective of the system and the integrated pre-cautionary principle will help to reduce investments for remediation of damages caused by environmental impacts.

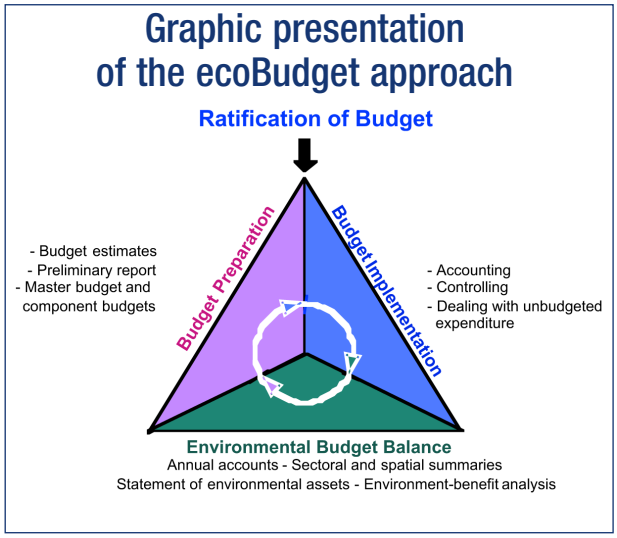
With the clear responsibilities and its transparency the system can contribute to avoiding double efforts for data-collection, monitoring and so forth. The reliable perspective coming from the target setting will help investors to plan and decide investments on a reliable basis.

Similarly, the non-economic benefits from ecoBUDGET are, at this time, nearly impossible to calculate in detail. This is first of all because the benefits are of an objective and mostly qualitative nature, very often related to perceptions of quality of life. For instance, benefits from ecoBUDGET can be presumed increased population well being and, possibly, health from different measures of the system. The complex nature of these objective factors also makes it difficult to state exactly how much influence ecoBUDGET has, since the issue is affected by a multitude of other constituents.

Why do we quantify: what is the use of the study (aid to decision, governance...).

The great innovation of the system is that it gives a comprehensive, yet understandable and transparent overview of the situation of the natural resources consumed in a local community in order to identify the areas where efforts can be most effectively and efficiently directed. By that, it serves as the only political environmental related management system and by that will lead to a more efficient and cost-reduced local administration.

As a conclusion one can state that ecoBUDGET provides the framework for good management of local environmental, and social, resources.



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INDICATORS OF QUALITY OF LIFE IN BRISTOL, UK

Partners of the project

Bristol City Council (lead organisation)

Local agencies e.g. Police, health authority and utilities, local stakeholders, voluntary and community groups.

Objectives

- To measure quality of life (sustainable development) using over 100 environmental, social and economic indicators, and demonstrate if quality of life is getting better (more sustainable) or worse (less sustainable).
- To inform policy makers about quality of life in the city and provide a basis for action improve things.
- To raise awareness about quality of life amongst the public and stakeholders.
- Motivate the public to make sustainable choices.
- Profile neighbourhoods and support bids for funds for neighbourhood regeneration, and target resources to needy areas.
- Promote partnership work and the sharing of data for mutual benefit.
- Share good practice and promote the use of a management tool for measuring progress and performance.

Stages of the project

Indicators of Quality of Life in Bristol is now an annual project.

Background - This project was initiated in 1996 to monitor the State of the Local Environment. The set of indicators was expanded in 1997/98 as a means of monitoring sustainable development and LA21. In 1999/2000 national sets of quality of life indicators and the European Common Indicators were introduced to measure local sustainability. Bristol took a lead role in using these indicators and has been able to share good practice with many other municipalities.

Quality of life indicators annual programme

- Data collection:
  - conduct annual Quality of Life household survey of over 3,000 residents and over 1,000 young people.
  - update existing indicators collected by the council, other agencies and stakeholders.
- Analyse trends, interpret results using graphs and maps, statistical and demographic analysis.
- Publish consultative draft Quality of Life report and summary leaflet for wide circulation.
- 2 - 3 month consultation phase:
  - feedback received, amendments made.
  - new indicators developed following consultation.
- Publish final annual report.

What is being quantified: it is the question about of the physical and monetary accounts;

Quality of Life indicators are sustainability indicators and can be quantitative (e.g. level of air pollution, amount of waste recyced, number of wild birds) or qualitative (e.g. % of residents concerned abour crime, % of residents who feel their local area has improved). Bristol measures over 100 indicators grouped under 17 sustainability topics - waste management, energy, transport, environmental protection, biodiversity, land use and development, housing and shelter, sustainable business, health and well being, community safety, social economy, culture and tourism, leisure and recreation, education, poverty, access and community and global issues.

The project combines the local authority-led 'top down' and community-led 'bottom up'approach with **5 levels** of indicators measured. These levels are :

LEVEL 1 ***European Common Indicators*** -These are integrated indicators based on concerns for environmental protection, equity and social exclusion, local governance / empowerment / democracy, local / global relationship, local economy, and cultural heritage / quality of the built environment. Measurement is led by the local authority with quantitative information from existing monitoring. Qualitative information is derived from an annual Quality of Life in your Neighbourhood survey of Bristol citizens.

LEVEL 2 ***National Indicators*** - In 1999 the Audit Commission in the UK introduced a set of quality of life indicator definitions. These are used by local authorities and, although primarily for local use they offer national comparability. In Bristol information for indicators are derived from the Quality of Life in your Neighbourhood survey and local/ national data sets.

LEVEL 3 ***Stakeholder Indicators*** -These indicators are selected using a people based 'bottom up' approach after stakeholder and public consultation; they are being measured and updated by stakeholders and NGOs.

LEVEL 4 ***Bristol Ward and Citywide Indicators*** - These indicators were introduced as benchmarks in 1996. Their measurement is led by local government

officers and approximately 70% of the information is supplied by Bristol City Council, including results from the Quality of Life in your Neighbourhood Survey that generates information about sustainable lifestyles in communities. The remaining 30% is provided by the health authority, local universities, the police authority, private and voluntary organisations. Most of the indicators can be illustrated as trends and neighbourhood maps.

LEVEL 5 ***Community Indicators*** - These are being developed and measured by communities and address unique, local concerns.

Who qualifies for the study: who is in the field of study (a territory, a department...);

The project brings together local agencies and stakeholders in the city of Bristol who hold/use information about the quality of life in the city.

There are two main surveys conducted annually : (i) the Quality of Life in your Neighbourhood survey is a random household survey of adults, (ii) the Young Person's Quality of Life survey is aimed at 11 - 16 year olds and is conducted at Bristol secondary schools.

The target audience for the annual report produced by the project includes policy makers and residents, and is of particular interest to those living and working in needy areas.

How do we quantify: it is the question about the means and the methods of quantification;

The choice of indicators is based on the following criteria:

- be easily to understand and help simplify complex information
- have resonance and reflect day to day sustainability and quality of life concerns
- be able to show trends over time and monitor if change is in a sustainable direction
- have flexibility in a changing society
- be able to allow comparability between wards and cities.

Great emphasis is put on making indicators 'understandable' rather than just dry statistics. Traffic lights are used to capture the public imagination and help illustrate if an indicator is getting better (more sustainable) or worse (less sustainable).

How the information is displayed is a crucial part of the development of indicators in Bristol, and the colour annual report makes full use of graphics and a user-friendly format. Maps and trends can raise awareness about quality of life in neighbourhoods, aid community and ward profiles and allow comparability of wards and cities. Statistical analysis of indicators can show linkages between issues and neighbourhoods. Also an Index of Quality of Life in Bristol (based on ward scores) shows if the city is moving in the right direction with a better quality of life and sustainable development.

7) Why do we quantify: what is the use of the study (aid to decision, governance...).

The measurement and publication of Quality of Life indicators provides:

- useable baseline information to help focus the needs and wants within communities and inform policy makers and those targeting resources and regenerating neighbourhoods ;
- monitoring of Local Agenda 21 and sustainable development in the city ;
- performance monitoring and assessment of policy/initiatives. Indicators lend themselves to target setting for the future and forward planning;
- the promotion of partnership work and consultation;
- a joining-up of the local authority and the community in a process that is less bureaucratic and more meaningful to citizens and is of widespread general interest.

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CITY AND LOCAL ENVIRONMENTAL ACCOUNTING AND REPORTING (CLEAR)

Strategic objectives

1. Improve the processes of local governance

2. Improve the process of integrating environmental policies with social economic policies and, as a consequence, orient the decision-making process of the local authorities.

3. Develop and diffuse environmental accounting and reporting standards («principles») for local authorities.

4. Raise the quality of public reporting in terms of greater transparency and involvement of stakeholders

The purpose of CLEAR is to test, in a coordinated way for the first time in Italy, the realization and approval of environmental balance sheets by the 18 local partner authorities alongside, and together with, traditional economic/financial planning and balance sheet tools. The leader of the project is the Municipality of Ferrara, the other participants are the Municipalities of: Bergeggi, Castelnovo ne' Monti, Cavriago, Grosseto, Modena, Pavia, Ravenna, Reggio Emilia, Rovigo, Salsomaggiore and Varese Ligure; and the Provinces of Bologna, Ferrara, Reggio Emilia, Modena, Naples and Turin. The Emilia Romagna Region and Les EcoMARES are providing, respectively, the vertical integration of the environmental accounting tools produced and a comparison with analogous foreign experiences.

The project arose from the assumption that moving towards sustainability means clarifying how local authorities should manage the environment and how to promote participation and responsibility.

The environmental question is a very concrete problem in both large cities and small towns: it has to do with controlling pollution and the quality of the area, of protection policies and strategic opportunities, of the available of resources and their social distribution.

And yet, there aren't many tools for evaluating the environmental effects of territorial policies. The traditional economic/financial and balance sheet documents, the principal tools for comparing policies and decisions, are not structured to take into account environmental costs, which consist most of all of impoverishing and exhausting natural resources and the costs of dealing with pollution, diseases and the repair and compensation of the damage after the calamities.

For traditional accounting and for the majority of planning tools, developed when the theme of sustainable development was not yet a question in the center of attention of worldwide public opinion, it is simply a matter of hidden costs.

In the philosophy of the CLEAR project, the Environmental Balance Sheet was developed specifically to be a practical support tool for local administrators in the context of the complexity of the public decision-making process.

With respect to the authority's economic/financial balance sheet, the Environmental Balance Sheet is a satellite balance sheet that provides data and information on the trend of the state of the environment, on the environmental impact of sector policies, on the relationships between economy and environment, on environmental costs, on the major environmental problems and on the efficacy of strategies implemented by the Administration.

It is a tool that is useful to administrators for monitoring policies from the point of view of the fallout for sustainability and the quality of urban life and to promote awareness of environmental problems at a local level.

Project Phases

The first project phase provides for the **definition (explication) of environmental policies**, through conversations with assessors and directors within Municipalities and Provinces and with contacts at participating companies (former municipally-owned companies).

Next, environmental policies are reclassified on the basis of the **municipalities' reporting spheres and the provinces' spheres of competence**, identified during the course of the preparation work for the CLEAR project. These spheres of influence have been derived from the responsibilities that Municipalities and Provinces have by law and from Strategic Environmental Evaluation (SEE) criteria to obtain the macro spheres of competence listed here, respectively, for Municipalities and Provinces:

1. Urban development
2. Sustainable mobility
3. Public and private green areas and natural systems
4. Waste
5. Water resources
6. Energy
7. Information and participation
8. Other environmental management plans and activities

Reporting spheres for Municipalities

PRODUCTIVE ACTIVITIES: AGRICULTURE, INDUSTRY, COMMERCE AND TRADES AND TOURISM

WATER RESOURCES

PROTECTED AREAS FOR FLORA AND FAUNA

PLANNING AND MANAGEMENT ON THE SUBJECT OF WASTE

PLANNING AND MONITORING RELATIVE TO THE PHENOMENA OF ATMOSPHERIC AND ELECTROMAGNETIC POLLUTION AND THE SUBJECT OF ENERGY AND NOISE

ACTIONS RELATED TO INFORMATION, EDUCATION, TRAINING AND PARTICIPATION

SUSTAINABLE MOBILITY

SUSTAINABLE MANAGEMENT OF THE TERRITORY AND USE OF THE SOIL

ENVIRONMENTAL MANAGEMENT SYSTEMS WITHIN THE AUTHORITY, CIVIL DEFENSE AND PROTECTION OF HERITAGE

Spheres of competence for Provinces

Definition of the authority's medium to long-term **strategic objectives**, short-term **policies** and **actions** already implemented, or in the phase of implementation.

Evaluation of the coherence of the **strategic objectives and policies** assumed by authorities in the environmental field with the strategic objectives and **actions** defined in **the Agenda21 Action Plans** by the stakeholders. Involving those who have an interest is a central aspect of the CLEAR process; the definition of Action Plans by the Agenda21 Forums and their substantial acknowledgement in the operating plans of the municipalities and provinces represent the central elements of the inclusion of the expectations of stakeholders in the Environmental Balance Sheet.

The next phase of the CLEAR process anticipates the **reclassification of the annual environmental expenses (monetary accounts)** incurred by the municipalities and provinces (during the first application phase, we have taken into consideration the years 2000 and 2001).

The definition of a **physical account plan**, i.e., an accounting system that takes into account the costs of Administration policies, using, for reporting purposes, the set of indicators available and deduced in good part from: the Municipal Sustainability Report, the Agenda21 Action Plan and Urban Ecosystem.

Reporting activity: this consists in declaring the environmental effects of economic and sectorial policies. This means that governmental acts in the territory will have a natural (and transparent) background of familiarity with the value of environmental resources and will, thus, be able to optimize the accounts, making policies more eco-efficient. Thus conceived, environmental accounting can become one of the more effective tools in the toolbox of a renewed governance.

The development of the Environmental Balance Sheet, both forecast and final, whose skeleton consists of the plan of physical accounts, monetary accounts and the relative reporting and discussion and approval by the executive committees and municipal and provincial councils.

Activity of publicizing the contents of the Environmental Balance Sheet

Demand for physical and monetary accounts

Physical accounts

For accounting for the obligations and policies of the municipalities and provinces that have an environmental content, a plan of accounts or system has been defined that associates one or more physical indicators to each sphere of reporting or competence. These indicators, selected from among those that the municipalities and provinces use in other documents (A21 Plan of Action, Report on the status of the environment, and Urban Ecosystem), were updated and have as their temporal reference, primarily the year 2001. The physical accounts, for each of the eight reporting areas or nine areas of competence, have been commented on and summarized in tables and represented with graphic diagrams.

Monetary accounts

The objective of the activity of reclassifying environmental expenses is that of recognizing the amount of the expenses incurred by the Administration for «the management of environmental activities, which includes the prevention of pollution and the protection of the environment» and to connect them with environmental policy decisions. In fact, the monetary accounts will be used to verify the achievement of the environmental policies inserted into the planning documents. In this regard, it will be useful to recall that the information contained in data of a monetary character (expenses forecast, expenses committed and expenses effectively incurred) have to do exclusively with the quantity of financial resources destined to environmental subjects.

To whom is the study addressed: Sphere of competence

The project involves municipalities and provinces and all services and sectors that deal internally, whether directly or indirectly, with the environment and, in some fields, such as those related to water, waste and energy production, it extends to the formerly municipally-owned companies. As a consequence, if the balance sheet was prepared by the province, the territory of competence for the measurement of the indicators and monetary and physical accounts presents a provincial valence; if the same balance sheet was prepared by the municipality, the territorial sphere of reference is municipal. In any case, the Environmental Balance Sheet is an intersectorial tool.

Measurement methods

For the measurement of physical accounts, we make use of a system of indicators derived from the Municipal Sustainability Report, the Agenda21 Action Plan and Urban Ecosystem and connected to the strategic objectives and actions included in the reporting spheres and spheres of competence.

To these indicators, others have been added that are specific to some spheres of reporting or competence in relation to the strategic objectives defined by the authority in the environmental field. The selection of indicators has led to the definition of a set for which data is already available and that allow defining, through historical comparison, the effectiveness of the policies activated towards the pursuit of the strategic objectives and, thus, of giving an account, in physical terms of the anticipated results (example: improving the quality of the air and water, use of the soil, increasing forestation, urban mobility, etc.).

With reference to the monetary accounts, we decided to use the EPEA chart of accounts contained in the SERIEE system of environmental accounts, adapting it the characteristics of the local authority partners.

The EPEA methodology defines as environmental expenses all those expenses (current and investment) relative to actions whose principal purpose is the prevention, reduction and elimination of all causes of environmental degradation. Therefore, the activities considered do not include those that, while exercising a favorable impact on the environment, pursue other primary purposes and, therefore, the reclassification has also taken into account the spheres of reporting and competence of the CLEAR project.

Why measure

The parallel approval of the economic and «green» balance sheets will, over time, provide useful grounds of comparison for recognizing and declaring the environmental effects of economic and sectorial policies. This means that governmental acts in the territory will have a natural (and transparent) background of familiarity with the value of environmental resources and will, thus, be able to optimize the accounts, making policies more eco-efficient. Thus conceived, environmental accounting can become one of the more effective tools in the toolbox of a renewed governance.

The CLEAR project has activated a process of accountability in the context of the municipal and provincial structures involved, which allows defining the authority's policies and commitments in a single instrument, the Environmental Balance Sheet, and associating physical and monetary indicators to them. Its structure takes into account the assumptions of the most used guidelines for social and environmental reporting, such as those of the Global Reporting Initiative network. The technical/scientific tools to which CLEAR refers have also been validated and published: sectorial pressure indicators, European indicators of local sustainability, Ecological Imprint, the reclassification of economic/financial balance sheets by EPEA (Environmental Protection Expenditure Account) and the European SERIEE (Système Européen de Rassemblement del l'Information Economique sur l'Environnement) model.

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THE CONTAROMA PROJECT

The objectives

To realize, test, define and apply an environmental accounting system :

- integrated with current and scheduled environmental policies on the subject of the local Agenda21 and, at the same time, coherent with current accounting methods;
- for the purpose of obtaining a methodology for identifying, reclassifying and archiving the monetary environmental information contained in the financial statements of the Municipality of Rome;
- for the purpose of providing the administration a tool for the qualitative and quantitative description of environmental policies, actuated in a systematic and periodic manner.

The project phases

The CONTAROMA project has three phases:

1) a preliminary study of territorial, national and international experience with environmental accounting

2) testing an environmental accounting system for the Municipality of Rome and

3) mapping the actions taken by the Municipality of Rome in actuating the environmental action plan, with particular attention to the activities of Department X «Environmental and Agricultural Policies.»

What is being measured: the demand for physical and monetary accounts

Sphere of information	- Municipal environmental expenses (valorization of commitments) - Current municipal projects for sustainable development (qualitative description)
Geographic sphere	Areas of competence of the Municipality of Rome (all the municipalities)
Information selection (process)	Information agreed upon by project participants having as reference the Environmental Action Plan defined by the Forum, EPEA matrix and the current accounting system. Both the Forum and the Scientific Committee have been informed of the project methodology.
Information sources	Financial reporting; Reporting; Forecasting and planning report; Executive Management Plan (PEG) Interviews
Analysis activities	Definition of the methodology Analysis of environmental expenses for Department X (Environment) only -Test of the methodology Analysis of the environmental expenses of the departments primarily involved in actions for sustainable development - Application of the methodology Qualitative description and reclassification of projects for sustainable development
Products and output	Study of national and international experiences Contaroma matrix 2001 environmental expenses for function 09 Project sheet for the reporting of actions for sustainable development
Integration into the institutional process	Integration occurs indirectly, i.e., through the Environmental Action Plan

Who is qualified for the study: those who are in the field of the study (a territory, a department, etc...)

Areas of competence of the Municipality of Rome (all the municipalities).

How we measure: it is the demand for means and the methods of quantification

In the sphere of the Contaroma project, we tested an environmental accounting system through the deriving of a series of quantitative data from the annual accounting reports in order to realize the so-called monetary account. This latter was obtained thanks to the reclassification of expenses incurred by the Municipality of Rome for actions whose principal purpose is the prevention, reduction and elimination of the causes of environmental degradation.

We therefore decided to proceed

- Developing an ad hoc chart of accounts, beginning with the EPEA matrix
- Detailing specific expense items
- Defining a suitable reporting matrix
- Preparing a test with data for current expenses incurred in 2001 by the department with responsibility for environmental policies, agricultural resources and civil defense.
- Reporting the data for expenses incurred in 2001 by other departments that deal with territorial and environmental management.

Why we measure: what is the use of the study (environmental accounting is a decision and control tool, a tool for local governance).

The study was tested and prepared for the purpose of obtaining an interpretation of the numbers and expense items to evaluate the size of the commitment supported to achieve the policies and pursue the programs defined by the Municipality of Rome.

ENVIRONMENTAL ACCOUNTING DEPARTMENT FOR LOCAL COMMUNITIES

OBJECTIVE

The objective is **to appreciate the financial flows involved by the implementation of the local public policies of urban environment** (in spite of the confusion of competences between the communities, the diversity and the complexity of the accounting systems...) **and eventually their economic, ecological and social impacts**.

The measurement of the financial flows goes through the implementation of an environmental accountancy which one waits moreover, a greater clarity of the environment in its financial, tax, social or political dimensions within local public actions. The implementation of this accountancy facilitates the evolution of the managerial system towards a greater transparency and will support a reinforced global assessment approach.

CONTEXT ELEMENTS

The reform of intermunicipal links and the creation of agglomerated communities allow to set up intermunicipal status adapted to overcome the difficulties related to the confusion of environmental competences. Among the difficulties which can be thus solved, there is a coherent follow-up of the environmental expenditure thanks to the installation of an environmental accountancy at an intermunicipal level, often more relevant for the management of these questions. It indeed makes it possible, eventually, to fill part of the gaps of the accounting information system and facilitates the difficulty to draw a parallel between the expenditure and the environmental receipts. The environmental accountancy was established by integrating the recommendations of SERIEE nomenclatures and took as a basic concept the principles of a public accounting analysis.

REFERENCE TEXTS

1) Case study

- **Micro-economics of the urban environment, methodology of financial flows related to the environment, Poitiers and Lyon Case study,** Foundation of the Cities, December 1996;
- **Micro-economics of the urban environment, Amiens Case study,** BIPE, December 1996;
- **Micro-economics of the urban environment, Nantes Case study,** CDC Consulting, February 1997;
- **Micro-economics of the urban environment, Nantes agglomeration Case study,** CDC Consulting, October 1998 & November 2000;
- **Micro-economics of the urban environment, Amiens Case study,** BIPE, June 1999 & November 2000;
- **Micro-economics of the urban environment, typology of financial flows related to the environment, Poitiers Case study,** Foundation of the Cities, June 1999 & November 2000;
- **Micro-economics of the urban environment, methodology of the measurement of financial flows related to the environment, Lyon agglomeration Case study,** Foundation of the Cities, June 1999 & November 2000

2) Main Data

- **Collection of Studies and Works N° 9 «Waste management«** 1996;
- **Collection of Studies and Works N° 10 «Waste water management«** 1996;
- **the economic situation ED Economica 1997;**
- **SERIEE Methods (European System of economic data collection on the environment)** Eurostat - Luxembourg 1994;
- **Micro-economics of the urban environment, the cases of the agglomerations of Amiens, Lyon, Nantes and Poitiers, Synthesis -** Ministry for the Environment and Regional planning and Ministry for the Equipment, Transport and Housing 2001.

POSSIBLE TYPES OF ACTIONS

1-definition and measurements of expenditure and environmental receipts

As well in investment as under operation the real expenditures and receipts, i.e. giving place to withdrawal or effective cashing for the building owner (in opposition to expenditure and receipts of order), are quantified : construction and exploitation of a water purification plant, a factory of incineration of household refuse, of a noise-reducing wall, ...

As regards investment, with an aim of avoiding all double account, the expenditure of return of capital of loan is isolated and removed calculations. The expenditure (under operation and investment) is thus except depreciation, except refunding of the capital, but takes account of the interests of corresponding loans.

2 - Fields of investigation regarding the protection or the improvement of the urban environment

List of fields taken into account	Example of actions concerned by the investment
Drinking water	Leakage survey of the network
Water purification	Nitrates processing
Waste Collection	selected waste collection Containers
Waste processing	Rehabilitation of a rubbish dump
Urban cleaning	Automatic roadsweeper
Living environment + natural parks	Water-saving device for watering & spraying
Air } *among which Public transportion*	Network of measuring the quality of the air
Noise } *among which Public transportion*	Construction of a noise-reducing wall
Energy	Electric municipal vehicles
Natural, industrial and technological risks	Risks Monitoring and evaluation Intervention on accidents
integration of the environment in the local policies	Environmental urban development plan Charter of environment

3 Classification of the actions related to the environment according to their effects

Without taking again here the debate on the concept of environment, one can distinguish two great families of environmental friendly actions according to their effects, and whether or not they directly assign the people or through the biotope.

Protection and reproduction of the natural resources Optimization of the technical systems of exploitation and stock management	**EFFECTS ON the PUBLIC VIA the BIOTOPE**
Protection of the public health and safety Quality of the public life (smells, comfort, taste, beauty of the landscape, etc.)	**DIRECT EFFECTS ON the PUBLIC**

Among the actions affecting the biotope, one distinguishes a hard core : the one concerning the protection of the environment, in a strict sense of natural resource, and the other actions which correspond to a broader meaning of the environment.

PARTNERS

The delimitation of the geographical agglomerations perimeter results from a pragmatic approach, the intermunipal structure having in the agglomeration the broadest range of environmental competences determines the perimeter of the study.

The fields of the environment studied which do not concern the intermunicipal structure are taken into account on the same geographical field, either by addition or subtraction of municipalities, or by extrapolation or retropolation starting from the number of inhabitants (such inter-commune structure being smaller or larger than the geographical field of study).

It would be useful to identify the actors intervening in the studied fields of environment. It is at the agglomeration level that the institutions can take part in the actions concerned with the protection of the environment :

- **municipalities and their groupings (District, Urban Community, SIVU, SIVOM, mixed Trade unions...),**
- **Mixed investment Companies having in their shareholding a substantial representation of these municipalities or groupings,**
- **companies responsible for public utility**
- **satellite associations of the communities (in particular for the measurement of the quality of the air).**

PHYSICAL INDICATORS CLARIFYING THE LOCAL SPECIFICITIES OF THE ENVIRONMENTAL MANAGEMENT

Bond with a necessary intermunicipal step, the implementation of a physical and financial follow-up dashboard in the field of the environment is essential like a forthcoming stage of management for the municipalities.

The physical indicators and the ratios presented hereafter, as an example, often require estimates, the qualified services of the communities not always having precise or brought up to date statistical data.

" physical " indicators per year	Physical indicators / inhb.	Ratios of expenditure
Water (Cubic Meter of distributed water)	**Water purification (Cubic Meter / inhb.)**	**Water + cleansing (FF / Cubic Meter)**
Waste (Collected waste (Ton))	**Waste (kg / inhb.)**	**Waste (FF / Ton)**
Cleaning (M of street cleaned)	**Cleaning (M / inhb.)**	**Cleaning (FF / M)**
Living Environment + natural spaces (maintained ha)	**Living Environment + natural spaces (M_ / inhb.)**	**Living Environment + natural spaces (FF / ha)**
Public transportation *(Nb of movements " non captive " / year)*	***Public transportion (" non captive " movement/ inhb.)***	***Public transportation (FF / " non captive" movement)***

Methodological example : Identification of the actions by objectives of the Energy and Water fields.

An approach by actions

To use the analytical nomenclature suggested, it is essential to start from local environmental friendly actions and not from the concept of sector, which is too related to administrative and technical cuttings. A practical consequence is the need to focus on direct investigations instead of confining itself with an administrative accounts process.

The classification of the actions by objective

The majority of these actions observed is under the concern of several objectives : In particular, the actions regarding the protection of the resources are almost inevitably, and also the ones dealing with the protection of the population and the public health. To avoid often delicate and arbitrary charges between several objectives, the following actions presented below are charged under their leading objective.

Energy SECTOR	Environmental protection resource	Protection of the population, public health	Optimization of the technical systems...	Improvement / protection of the quality of life
- Conversion to renewable energies	X			
- Cogeneration (energy recovery) [1]			X	
- Systems decreasing smells and noises				X
- Regulation, insulation, conversion to systems of heating or lighting, allowing energy saving.			X	
- etc...				

Water SECTOR	Environmental protection resource	Protection of the population, public health	Optimization of the technical systems, productivity	Improvement / protection of the quality of life
<u>Drinking water</u>	X			
- Harnessing system protection				
- Treatment and distribution of drinking water		X		
- Stock management and ways to avoid leakages and overconsumption	X			
- automated management, Leakage survey of the network, preventive maintenance			X	
- Treatments of water taste and smell				X
<u>Waste water</u>	X			X
- waste water Purification				
- waste water Collection		X		
- Public awareness Campaigns on waste water	X			
- Noise, smells, aspects of water purification plants.				X
- Control of the autonomous water purification	X			
<u>Rain water</u>		X		
- Collection and protection against floods				
- Rain water Purification	X			
- Reduction in the impermeability of the grounds			X	
- etc.....				

1 In contradiction to the cogeneration system aiming only at a better output, and often realized from a fossile fuel. This type of cogeneration is not really distinguished from the replacement of boilers for a more powerful material, which écobilan is generally not known.

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FOR AN ENVIRONMENTAL ACCOUNTING TOOL (FEAT)

Project partners

- Pilot local authorities (France):
  - The towns of Fos-sur-Mer, Montreuil-sous-Bois, Paris and Saint-Denis
  - The Château-Thierry region «Community of Communes»
- other partners (France):
  - ADEME (Agence de l'Environnement et de la Maîtrise de l'Energie - French environment and energy control agency), ARENE IDF (Agence Régionale de l'Environnement et des Nouvelles Energies d'Ile-de-France - regional environment and new energies agency for the Ile-de-France), the European Commission through the LIFE Environment financial instrument, the Eco Maires association, Fondation des Villes - the towns foundation, MEDD (Ministry of Ecology and Sustainable Development) and the MELTM (Ministry of Development, Transport, Housing, Tourism and the Sea).

Eco Maires, the association of mayors focusing on the environment and sustainable development is steering this project

Objectives

The objective of FEAT is, through a process of collective learning, to establish a framework in which to understand, evaluate and communicate information on local environmental policies. It is notably based on analysing goals and their respective financial flows.

Understand:

FEAT will bring together three essential pieces of information so that local environmental policies can be appropriately conducted:

- a quantification of environmental expenditure and income and their respective destinations by environmental area (water, waste etc)
- a report on the state of the environment and the causal relationships between the different parts of the environment in the area.
- the specific contributions of the various institutions involved in the environment (water agency, ADEME etc).

Evaluate:

With the information that has been brought together, the public authorities will be able to monitor both the relevance and coherence of the environmental policies they have implemented and the resulting financial impacts.

Communicate:

FEAT is an indispensable instrument for ensuring citizens' participation and involvement in sustainable management of the area. It in fact means they are able to follow the objectives and implementation of the policies.

Stages of the project

The first part of FEAT applies a methodology that was drawn up in the framework of a research programme financed by the MEDD and the MELTM, three research bureaux (BIPE, CDC Consultant and the Fondation des Villes).

The FEAT project is made up of three stages.

A/ Establishing a system for monitoring financial flows related to the local authorities' environmental actions (12 months)

- Pin pointing both actions related to the environment and the reference physical data (tonnage of waste collected etc).
- Measuring the annual expenditure and income relating to these environmental actions.
- Consolidating and making a comparison of the results: adding up expenditure and income, producing relative data on the basis of the reference financial and physical data.

B/ Evaluating the impact of environmental actions (12 months)

- Finding the positive and negative effects of every environmental action: with the help of a cross referenced table, it will be possible to compile the positive and negative effects of each action on itself (own impacts) and on others (for example: pollution introduced by transporting household waste).
- Producing a comparison of the costs / advantages of the actions undertaken: from the previous table an evaluation of costs and advantages of actions can be made, in either physical or financial terms.

C/ Finalising prevention, sustainability and integration indicators for the policies (12 months)

- Drawing up indicators that allow the degree of prevention (prior treatment), sustainability (durability, adaptability) and integration (optimisation of the effects on other sectors) to be measured for environmental actions. The indicators will, in the main, be established by adapting indicators already in existence.

What is being quantified: the physical and monetary accounts

In the FEAT project, the actual financial flows relating to local authorities' environmental actions are measured. Nevertheless, in the second and the third parts the physical data will be introduced and used to put the financial data and the actions realised into perspective and to make an overall assessment.

Who qualifies for the study: who is included in the field of study (a territory, a department etc)

The method is applied to local authorities. It is tested in the FEAT project at a community and inter-community level.

How is it quantified: the means and the methods of quantification

From a list of actions defined as environmental (applying the methodological criteria), the method identifies the financial flows corresponding to these actions based on meetings with local authority staff. It is not therefore based on the public accounts.

For example, this method only considers an action to be environmental if its overall impact on the environment is positive, according to an expert, and that it corresponds to the following objectives:

- the protection and renewal of natural resources
- the optimisation of economic, technical or social systems
- the protection of the health and safety of the population
- the improvement and protection of the quality of life

Why quantify: what is the use of the study (aid to decision making, governance etc).

Notably FEAT will provide real clarity for environmental policies, will mean that a number of negative effects can be avoided, will improve understanding of expenditure and thus draw out levers for action, will provide an overall view of the quality of the policy being implemented and more generally provide an evaluation of the policy in respect of sustainable development.

FEAT will increase the transparency of public action for the environment.

Lastly, the implementation of FEAT will intrinsically result in thinking about actions, the environment and sustainable development both within the services and among local elected representatives.

This tool does not as such provide for the participation of the population. However, the FEAT project is only just beginning and it is very probable that elected representatives will use this tool to facilitate good participatory governance

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