

**ICLEI - LOCAL GOVERNMENTS
FOR SUSTAINABILITY (ED.)**

**THE
ecoBUDGET
GUIDE**

Methods and procedures of an
environmental management system
for local authorities.

**STEP BY STEP TO LOCAL
ENVIRONMENTAL BUDGETING**

**ICLEI - Local Governments for Sustainability (ed.) in
co-operation with:**

Växjö Municipality,
Municipality of Amarooussion,
City of Bologna,
City of Ferrara,
Municipality of Kalithea and
Lewes District Council.

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ecoBUDGET®.

A JOURNEY FROM AALBORG AND BEYOND!



Ten years ago mayors and local government representatives convened in Aalborg, Denmark to create the Aalborg Charter, which outlines the fundamental principles of local sustainable development and forms the platform of what we call the European Sustainable Cities and Towns Campaign. The Aalborg Charter, which by now has been signed by more than 2000 local governments across Europe, still guides our journey to local sustainable development. It calls for introducing instruments for environmental budgeting for local governments' management of natural resources. We recognise that numerous policies and activities yielding positive environmental consequences have already been successfully applied in many cities throughout Europe and the

world. However, while these instruments are valuable tools for reducing the pace and pressure of unsustainable behaviour, they do not in and of themselves reverse society's unsustainable direction. Still, with this strong existing environmental base, many cities are in an excellent position to take the threshold step of integrating these policies and activities into the governance process for managing local urban economies through a comprehensive sustainability process. What we need are support mechanisms to ensure an unwavering implementation of sustainable development policies.

ecoBUDGET, the method for environmental budgeting, has acquired the concept of periodic and systematic target and performance evaluation from financial budgeting. **ecoBUDGET** is thus attractive for politicians and senior managers, as it follows established routines and utilises a prominent and well-known terminology. It provides qualified data as basis for sustainability oriented political decision making. It allows for political target setting and presents achievement as concise as necessary to be useful for political work and as comprehensive as necessary to allow for effective management of scarce natural resources. **ecoBUDGET** can build upon existing routines and processes, thus avoiding system duplication and increased bureaucracy. The **ecoBUDGET** system is created and tested in co-operation with European cities, towns and counties, i.e. politically steered organisations of different cultural, geographical, historical and political background, thus suitable for any local authority, regardless of size or environmental background. **ecoBUDGET** simply provides local governments with a political framework instrument with which they can direct their local communities and their authorities towards the goal of environmental sustainability.

Margit Vestbjerg

Environmental Mayor, Kolding, Denmark and
Regional Chair for Europe, Executive Committee,
ICLEI - Local Governments for Sustainability

Successful expansion and the need for **ecoBUDGET**



Växjö municipality finds itself in an expanding period. The population continues to grow and in the last years, the role for Växjö as a regional centre in south-east Sweden has been strengthened. The university plays an important role in this development, and the future access to qualified labour is therefore high. Being a Mayor these are very pleasant news.

However, there are great demands on a municipality in expansion. Växjö is successful in meeting the needs for new homes, and the service to the inhabitants has been improved recently with a new library, new public family swimming-baths and a new sports centre. But, Växjö is also a successful municipality in the environmental area, which has focused its efforts on climate protection and lake restoration. For me as a Mayor, it is important not to lose the environmental focus, especially in an expansive period. I see it as crucial to make the right decisions in a long-term sustainable development perspective, and to check that the administration really complies. Therefore the City Council in 2000 decided to implement an environmental management system. The selection fell on **ecoBUDGET**, a system especially developed for political organisations.

ecoBUDGET has given us a tool to guide us on the way to become a sustainable city. The system forces the other council members and me to a better environmental control as it improves our material for decision-making. Among other things **ecoBUDGET** makes our environmental status and result more visible. The intimate connection with the financial budget system has given the system a stable structure and status in the organisation. Furthermore, **ecoBUDGET** gives the administration a frame to act within, which gives opportunities to find creative solutions instead of strict governing in details.

Växjö will continue to integrate **ecoBUDGET** with the financial budget. Personally, I see **ecoBUDGET** as an important tool to strengthen and develop the successful environmental work of the municipality, as well as a large potential for further sustainability development. **ecoBUDGET** is developed for and by the user (politically steered organisations) in Europe, thus I believe this system will be beneficial for any progressive and forward looking municipality.

Mr Carl-Olof Bengtsson,
Mayor, Municipality of Växjö

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Part 1 Introduction to ecoBudget

1.1 Why ecoBUDGET?

Developing with scarce resources - Reasons for implementation

Developing with scarce resources is arguably one of the biggest challenges we face as societies at the beginning of this new century. Local governments of all types and sizes are at the forefront of meeting this challenge.

When we talk about scarce resources we have grown used to thinking of finances. But scarce budgets go hand in hand with scarce personnel. Jobs are being cut not created, and when the person occupying a position leaves, offices are fused and departments combined.

In general, we have witnessed a move back to the imposition of mandatory duties, both to those transferred by the state and to mandatory self-regulatory duties (those required by law). Non-mandatory duties are falling by the wayside. The room for manoeuvre granted to communities (i.e. the freedom to regulate local community affairs which are not reserved by law for different administrative levels) is, on the whole, being eroded.

The paucity of resources goes far beyond the shortage of finances and personnel. Communities are also hit hard by the scarcity of natural resources: peace and quiet in towns, clean air, clean water, uncontaminated food, non-paved areas, animal and plant species. If clean, wholesome-tasting drinking water or clean air is no longer available, economic development is impaired (drinks manufacturers or (silicon) chip producers, for example, can no longer be established). If bathing in the river is not possible, the citizen's quality of life is impaired. Air pollution damages municipal woods and thus devalues communal assets.

If communities are to remain operable as the base units of state organisation, local politics must act in three target directions:

1. **Maintain and expand scope of action:**

- avoid further restrictions on community budgets, personnel and natural resources
- retain community assets such as financial and property assets, human and natural capital
- secure and expand expertise
- secure and expand instruments

2. **Budget efficiently** with scarce resources:

- introduce administration reforms with resource control modernisation: new forms of integrated public management with financial, personnel-management and ecological pillars
- set budgetary limits
- benchmark local authority efficiency

3. **Secure the future** through sustainable community development:

- compile a local Agenda 21 in agreement with various groups of society

Why ecoBudget?

- secure natural and economical resources for the benefit of the community in the long-term
- counter crisis-susceptibility through risk reduction
- secure social harmony by ensuring equal access to environmental and economic goods for all

Local environment budgeting places an instrument in the hands of communities with which to manage sustainable local development politically.

Efficient administration through modernisation - Environmental, financial and organisational needs

In the 1990's, municipal authorities were faced with calls for more efficiency and transparency. Antiquated authoritative administration management was criticised just as equally as a lack both of flexibility and of incentives to economise in a financial budget economy. New public management models were developed, promoted and introduced into numerous municipal administrations. The community became the 'Corporate City', administrations became 'service providers'; departments became 'business areas' or 'technical services'; department and office heads committed themselves to quality standards and service goals; budgets replaced cost items, and administrative action was subject to reporting.

These new mechanisms of public management models aim to achieve proposed goals with the highest possible efficiency of resources. Politics should define tasks and frameworks but no longer implement detailed controls. The accountable administration unit is granted greater responsibility for resources, but also freedom of action. While new public management models are capable of bringing about greater resource efficiency, a large gap in the system has already been detected and named. New approaches to public management consider finances and personnel, but lose sight of natural resources.

With local environmental budgeting, local authorities are able to manage the use of their local environmental issues, and co-ordinate their environmental activities more effectively. The systemisation of local authorities' environmental activities and their orientation on politically set targets will improve the efficiency and effectiveness of public administration by identifying gaps in data, avoiding double collection or storage of data, and concentrating data-collection on real information needs. Planning in all parts of the local authorities will be developed and carried out according to the same targets; monitoring and reporting will be structured to provide decision-makers with relevant information.

Participation in the consistent management framework *ecoBUDGET* will allow individuals to broaden their focus and consider their decisions and contributions as "part of a bigger picture" thereby better understanding the global perspective of their activities. The orientation to same targets, which are set politically with the environmental master budget, will lead to improved integration of all individual contributions.

Local Agenda 21: from goals to planned implementation

Local Agenda 21 processes around the world strive towards achieving sustainability through formulation of a long-term action plan. However, in practice, the Local Agenda 21 action plans consist of measures which are realisable in the short-term, but which are often of a symbolic nature, aimed at sustaining participant motivation by bestowing a sense of achievement. In contrast, LA 21 action plans rarely concern the implementation of long-term measures

involving the most important economic actors. The ecological component of sustainability (as with the social component) can not be achieved through this vague approach. How is the "City" or "County" structure to be retained within the framework of environmental budget efficiency if the local Agenda 21 does not provide a concrete (i.e. time and resource referenced) framework for the availment, i.e. use and consumption of natural resources and of environmental quality goals? If regular accomplishment controls, goal and measure monitoring and reporting are lacking, cyclic environmental management can not take place. The Local Agenda 21 requires a regular action mechanism if it is not to be a one-off, non-recurring event.

Local environmental budgeting can be linked with certain elements of the Local Agenda 21 (LA 21) process (refer to Chapter 3.2). Through the choice of targets and budget values, the environmental budget can be set up to reflect the emphasis on priorities and guidelines, in line with the objectives of LA21 working groups.

LA21 will benefit from local environmental budgeting as a concrete structure for the implementation of its goals and visions. Where these are incorporated into the setting up of the environmental budget, the targets will be oriented more towards sustainable development. The interaction of resource management, new public management and Local Agenda 21 in the context of sustainable community management with the help of *eco*BUDGET is outlined in Figure 1

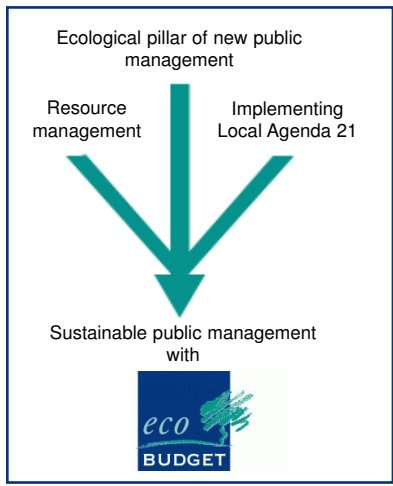


Figure 1:
Sustainable community management with ecoBUDGET

ecoBUDGET for sustainable municipal development

How can local politics win room for development despite scarce natural resources? How will the reform model for municipal administrations be adapted to include an ecological pillar? How will the Local Agenda achieve a sustainable action mechanism? These questions lead us to the issue of instruments.

Local environmental budgeting offers a solution in the field of ecological sustainability. In conformity with community (financial) budgeting, limited resources - here the natural resources air, climate, water, soil, animal and plant species, as well as human well-being - are budgeted by the community. The town or district council determines a periodic environmen-

Why *eco*BUDGET?

tal budget, which sets budgetary limits and environmental quality goals for the use and consumption of natural resources. The implementation of the environmental budget in the course of the environmental budgetary year is monitored, results are consolidated at the end of the year and an environmental balance sheet compiled and published in a report. This cycle is known as *eco*BUDGET®.

By securing this as a periodic procedure, *eco*BUDGET becomes a controlling instrument for the ecological sustainability of local communities. The concept and method of community environmental budgeting, the prerequisites for the introduction of *eco*BUDGET instruments and the procedural requirements are comprehensively described in the following chapters.

Conformity with community (financial) budgeting

The concept of local environmental budgeting was deliberately designed to conform to community (financial) budgeting - the institutions and procedures of which were examined to see if they could provide a model for the budgeting of natural resources. If the management of limited natural resources is to be given as much care and attention as the management of monetary resources, the diversion of practices into specialist areas and the role of specialist laws must be overcome and a collective controlling instrument be created, that of environmental budgeting.

Financial budgetary principles now have a counterpart in environmental budgetary principles - the budgetary prudence principle corresponds to the precautionary principle of environmental politics, thriftiness and economy correspond to resource efficiency, budgetary compensation to the principle of sustainability.

In environmental budgetary planning as in the context of financial budgeting, there should be a balance between centralised and politically accountable budget and decentralised budget responsibility. Structurally, environmental budgeting requires a central responsible agency, analogous to the financial officer. In addition, there are those responsible for the budget in the individual departments and public sector establishments.

Environmental budgeting follows a cyclical course, in the same manner as its paragon: itemisation of a draft budget, implementation of a budget during the budget period and publication of an annual statement.

*eco*BUDGET - *what it is and what not*

Some questions should be addressed in order to avoid misunderstandings and provide a clear picture of what *eco*BUDGET is.

*Does eco*BUDGET *have anything to do with money?*

The community environmental budgeting approach intends to enable the budgeting of natural resources, alongside with the budgeting of "money" and "personnel" resources. If local politics has to first learn to budget resources other than money alone, and to think not only of finances when discussing local budgeting processes, then this is precisely the aim.

The indicators and accounts of the environmental budget are not assigned a "monetary" value. If the use of natural resources were monetised, that is, expressed in monetary units, local politics would be encouraged to limit its view to finances, instead of accepting comprehensive responsibility for resources. Additionally, it would promote the undesirable counterbalancing and offsetting between various environmental effects.

However, due to the fact that measures for preserving natural resources can also either reduce or generate costs, a connection between environmental budgeting and financial budgeting does exist (refer to Chapter 3.5). For instance, if a council specifies ambitious goals for reducing the use of natural resources, or a "reduction of ecological debt", measures towards these goals might on the one hand require investments, but on the other, reduce operating costs. The cross-relationships between budgets should therefore be contemplated during their establishment, as described in the preliminary report, and also considered in the decision-making process.

Is ecoBUDGET an "indicator project"?

The environmental and sustainability politics of our times are carried atop an "indicator wave". The number of indicator projects financed by communities, governments, the European Commission and UN organisations is enormous. Though *ecoBUDGET* uses indicators which describe the use of natural resources and environmental quality, it is not equipped to provide a comprehensive formula for urban (municipal) sustainability. However, it does provide a systematic, primarily indicator-neutral and apolitical framework for the use of indicators. If a community wants to control their natural resources by innovative means, it may be creative in its choice of indicators. Further to this, some elements of *ecoBUDGET* (e.g. the environment-benefit analysis) provide a reference point for the environmental use vis-à-vis the social benefit attained, and thus offer an interesting contribution to the indicator discussion. In any case, *ecoBUDGET* takes local government autonomy seriously and therefore does not seek to bind itself to uniform indicators. Instead, the community determines the indicators (and thereby the accounts) of environmental budgeting for itself.

Is ecoBUDGET yet another environmental planning instrument?

ecoBUDGET encompasses the potential to act as a key for "de-refining" the environmental planning instruments which are often referred to as being "over-bred". This potential can be realised if the proposed environmental code were to harmonise these instruments, free them from unnecessary load, and link them to *ecoBUDGET* specified resource-use and environmental-quality goals.

The system helps to implement Local Agenda 21 action plans, and gives other management and planning instruments (e.g. indicators, sectoral management plans for water, land-use, bio-diversity, air quality, ISO / EMAS, EIA, SEA, EIS) a clear and ambitious orientation (refer to Part 3). Hence, the application of tools will comprise a consistent concert of instruments rather than a "cacophonous orchestra". ***ecoBUDGET* a territorial political management instrument!**

Currently, environmental issues are often put on the political agenda in an ad hoc manner. *ecoBUDGET* with its systematic reporting to the city council and the periodical approval of targets in the environmental master budget, periodically confronts the highest municipal decision-making committee with environmental and sustainable development issues. Thus, a continuous and sustained political consideration of environmental protection is installed. This leads to better informed and responsible decision-making, oriented towards self-set and self-binding targets, instead of decisions taken according to the fashion of the day.

In contrast to other instruments, *ecoBUDGET* has from the very beginning been designed to cover issues concerning the entire territory of cities and towns. This follows the idea of polit-

The *eco*BUDGET concept

ical management, which per definition is not limited to the local authority as an organisation. The approach is implemented through indicators and targets that reach out into the community.

1.2 The *eco*BUDGET concept

The *eco*BUDGET concept delivers local environmental budgeting using a politically ratified environmental budget together with an associated management process, the environmental budget cycle. Together they form the *eco*BUDGET environmental management system.

The *eco*BUDGET method is rooted in three fundamental principles: Firstly, it is based on analogies with the principles and procedures of financial budgeting, which form the guidelines for the individual methodological stages of the environmental budget cycle. These will be presented in Chapter 1.2.1 Resource management. Secondly, it comprises a full management cycle of "plan - do - check - act", known as the Deming Cycle, first introduced in 1956. This practise, which has been adopted by *eco*BUDGET, is commonly accepted within environmental management principles and can also be found in other standardised environmental management systems (e.g., ISO 14001 or EMAS). Thirdly, the *eco*BUDGET method accepts sustainable development as a guiding target regime; i.e. targets and actions within *eco*BUDGET should strive for local sustainability. Thus strong political commitment and community involvement are both prerequisites for *eco*BUDGET.

1.2.1 Resource management

A local administration committed to sustainability must efficiently manage all its resources, whether they are man-made or natural. By following the cyclical approach of financial budgeting and by utilising some of its principles, politicians and senior urban managers will find *eco*BUDGET easy to understand and integrate into their existing work-practices. Familiar methods and principles of financial budgeting demonstrate remarkable analogies to ecological principles, as is illustrated by Table 1:

BUDGETING PRINCIPLES	ENVIRONMENTAL POLICY PRINCIPLES
Prudence	Precautionary orientation
Uniformity	Uniformity
Budgeting honesty and clarity	Transparency and comprehensibility
Individual assessment	Individual assessment
Thrift	Resource sufficiency
Economy	Resource efficiency
Debt avoidance	Sustainability

Table 1. Relationship between budgeting principles and the guiding philosophies of environmental politics

The prudence principle states that for all expenditure and expenditure commitments, a prior plan must be set up. This corresponds largely to the ecological principle of precautionary orientation (this should, however, not be confused with the precautionary principle as formulat-

ed in environmental legislation).

The second principle of financial budgeting is that of uniformity. The notion of an easily understandable and uniform classification can be directly applied to environmental budgeting.

The principle of budgeting honesty and clarity is especially important in environmental budgeting, as transparency and comprehensibility are decisive for the analytical strength and acceptance of the concept.

The financial budgeting principle of individual assessment means that, as far possible, all budget movements are to be individually accounted for and are not aggregated to extensive general categories. This does not, however, affect the subsequent pooling of items into expenditure or income classes. In environmental budgeting too, as much differentiation as possible should be made between individual, original budget items.

Possibly the most important budgeting principles are those of thrift and economy. At first view, they appear to mean the same thing. But economy means that as few resources as possible should be used to achieve a given result. This corresponds to the ecological goal of increasing resource efficiency. The principle of thrift, on the other hand, asks whether this result is even necessary, or whether the acquisition is feasible with the resources available. This is central to ecological considerations because it is possible to imagine resource-efficient economics where resource needs are actually far higher than supply. This requirement is generally known as resource sufficiency.

The final principle in Table 1, avoidance of debt, is derived from the local authority principle of income generation. This prioritises the generation of income without the creation of debt. In times of tight budgets and general doubts about fiscal economic policy, warnings to reduce debt are commonplace. This corresponds to a fundamental principle of sustainable development - to improve human well-being in the short term without threatening the local and global environment in the long term.

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 (described later in Chapter 1.2.4). Similarly, the financial budget fulfils a variety of functions, which also find their equivalents in various goals of environmental budgeting, as is shown in Table 2.

FINANCIAL BUDGET	ENVIRONMENTAL BUDGET
Financial planning	Environmental quality planning
Political planning	Priority setting for environmental policy
Administrative controls	Transparent monitoring of environmental spending
Regulatory budget controls	Monitoring towards sustainability orientation
Regulatory basis	Regulatory basis
Local authority benchmarking	Local authority benchmarking

Table 2. Functional analogies between financial and environmental budgets

In financial planning, we consider when and how income is expected, and when each expenditure can be incurred. In an ecological context, this is equivalent to assessing when each item of the environmental quality conditions will be achieved.

The *eco*BUDGET concept

Political planning, which is intimately related to financial budgeting, covers all fields of local politics. The budget determines what is possible, when, and with what funds. Alongside the debate on the achievability of certain environmental targets, political planning takes place, which is known here as the priority setting for environmental policy. The box below gives examples of politically and environmentally relevant priorities of some local authorities.

Liberty in resource selection results in locally relevant environmental targets.

*The freedom in resource identification allows each local authority to tailor the focus and scope of *eco*BUDGET to reflect the local situation - i.e., to set local priorities. Below are some selected examples of resources and their related indicators, which are being used in *eco*BUDGET-cities in Europe.*

RESOURCE	INDICATOR
Climate stability	Fossil carbon-dioxide emissions within the total geographical area
Availability of materials	% of waste sorted
Good air quality	Ambient averages for nitrogen dioxide in the district
Biodiversity	Protected municipal land
Good built environment	Public city transport
Quiet environment	Noise levels in urban area
Soil quality	Quarries with previously characterised material
Water	BOD in sea water

*Table 3. Examples of relation between natural resources and *eco*BUDGET indicators.*

*Note that the above-mentioned resources are examples used in present *eco*BUDGET cities. Other authorities might identify different issues of importance. The *eco*BUDGET methodology does not allocate resources that must be covered, instead the methodology recognises the difference in needs and problematic issues amongst local authorities world-wide.*

One of the principal functions of financial budgeting is to enable the monitoring of local administration performance by city and county councils, as well as by the public. A framework for administrative action is provided, and adherence to the budget monitored. There is a tendency to implement such controls in environmental budgeting, even though they are less sophisticated. In any event, an increased transparency in the monitoring of environmental spending is assured, largely with assistance of stakeholders outside the administration. Thereby, *eco*BUDGET also allows for the monitoring of activities that are outside direct administrative control.

Financial budgeting offers not only administrative but also regulatory budget audits. This allows for the verification of whether the expenditure was made according to budgeting principles and in accordance with current legislation. In environmental budgeting, this corresponds to the monitoring towards sustainability. Environmental budgeting supports this unique task of environmental politics.

Similar to the financial budget, the environmental budget represents a regulatory basis for

measures taken by local authorities. Finally, the possibility of local authority benchmarking also applies to environmental budgeting.

Even though the analogies presented might suggest the use of monetary values in *ecoBUDGET* as is the case in the financial budget, it must be stressed that *ecoBUDGET* does not place a monetary value on the environment, nor does it attempt to express impacts on the environment in monetary terms. Instead, *ecoBUDGET* uses physical values for natural resources as a base, i.e. it deals with the management of natural resources. By using physical, quantitative indicators, *ecoBUDGET* can then present local environmental targets and enable the monitoring of the state of the (local) environment in relation to these targets (more about indicators and targets is explained in Part 2). However, some initiatives are underway to link *ecoBUDGET* with financial budgeting (see Chapter 3.5 *Integration between ecoBUDGET and financial budgeting*).

The resources used in *ecoBUDGET* are not restricted to fundamental environmental resources such as land, water and air, but rather a wider interpretation of environmental good. The term *natural resource* is frequently understood as naturally occurring materials and supplies of raw materials and water. This simple definition, however, does not do justice to the actual scarcity of resources in our environment and nature. The *ecoBUDGET* concept defines, natural - or better: environmental - resources as all the entities (common goods), which can be used directly by man but which man cannot directly produce, including availability of materials, biodiversity, peace and quiet. It can also be the state of a system, such as the composition of the Earth's atmosphere, upon which the stability of the global climate system depends. Generally spoken, in *ecoBUDGET*, *environmental resources* in the widest sense, are elements or components of the ecosystems (global system) that support human life, and include raw materials, climate stability, peace and quiet, air, water, and soil/land. Environmental resources can be affected and degraded by human activity.

Each local authority is free to identify locally relevant resources, and thus able to create targets that are relevant for local politicians and the local community (see more about identification of resources in Part 2).

However, the selected resources should have political, public and scientific relevance. For instance, those used in present *ecoBUDGET* cities, towns and districts acquire their scientific, political and public legitimacy through international conventions, European and national legislation, local priorities and plans, and public opinion.

A concluding remark regarding the liberty of resource identification is that this, of course, leads to other possible extensions of the *ecoBUDGET* concept. For instance, by including other resources such as social resources, thereby including social indicators and targets, the *ecoBUDGET* concept can be further developed to embrace the complete sphere of sustainability (Part 3 provides further information on the inclusion and integration possibilities of other dimensions and instruments).

1.2.2 Political commitment

As with any management system, *ecoBUDGET* needs top-level support and backing. However, *ecoBUDGET* goes one step further by requiring active top-level involvement. Whilst other environmental management systems have built-in mechanisms to ensure management is informed of and evaluates the system, there generally are no mechanisms to ensure its participation in target and programme formulation. In a politically steered organi-

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sation, this weakens the system, since it lacks a bestowing of political legitimacy to the environmental activities implemented predominately by the administration of the local authority. In *eco*BUDGET, making the political sphere part of the process has solved this problem. Initially, politicians are encouraged to partake in the identification of resources and the setting of objectives. However, the major and most important role of politicians is to politically discuss, and later ratify, the environmental budget. Firstly, environmental issues will improve its prioritisation on local political agendas by politicians discussing the objectives, targets, budget limits and timelines of the *eco*BUDGET. There are, of course, numerous local authorities already highly political committed to environmental concerns. In these cases, *eco*BUDGET will offer a platform for sound and informed discussions. For local authorities where the situation is less "environmentally developed", *eco*BUDGET will introduce environmental concerns at the highest level, and also force politicians to consider environmental issues in their everyday work.

Political commitment - The City of Bologna, Italy

In Bologna, both the environmental budget at the beginning, and the budget balance at the end of the year were ratified through a political majority (and not through unanimous vote) in the City Council. The four hours of political debate in the Council were on the budget itself, and not on the ecoBUDGET system. Especially the opposition party had no objections on the concept of ecoBUDGET, but rather on the definitions and targets set in the budget, as well as the measures to be implemented. The major criticism cited by politicians of the opposition parties was that the targets in the environmental budget were not set adequately high so as to improve the local environment.

Some politicians raised concerns about a lack of community involvement and participation, with the possible danger of a marginalisation of the environmental budget vis-à-vis the financial budget.

Furthermore, political proposals have been made for establishing clear links to the existing financial budgeting process and the social balance of the City of Bologna. The interdependence of these three spheres calls for a comprehensive overview needed to take account of environmental, economical and social perspectives in order to affect the transition to a more sustainable development.

Secondly, by politically ratifying the environmental budget, the politicians also send a message to the entire local government and the community. The environmental budget conveys the political mandate for the administration to implement measures and activities in order to meet the targets set in the budget, thereby increasing the importance of environmental issues in the local authority.

Thirdly, by evaluating and politically ratifying the budget balance at the end of the year, politicians reaffirm their environmental commitment. This implies a further justification for programme and activity implementation. Through this evaluation, the politicians will gain further information on the local environmental situation and thus be increasingly aware of related needs and requirements.

Of course one might claim that these features need not necessarily result in higher political commitment or better environmental performance. It is true that the political ratification of targets or systems does not necessarily result in better quality control or higher motivation. Nevertheless, due to *eco*BUDGET's inherent community involvement and public transparency, quality control is guaranteed through public and stakeholder scrutiny.

Finally, *eco*BUDGET does not initially require high-level political involvement or environ-

mental understanding. As described above, the system allows for internal development and learning, thus increasing awareness of the importance of environmental issues and the know-how of their management step-by-step. The transparency of the system and its community involvement allow local politicians to clearly and comprehensively establish their environmental commitment (see box above).

1.2.3 Development of the *eco*BUDGET method

The *eco*BUDGET development was driven by the Aalborg Charter, 1994, following the idea to implement a budgeting system for natural resources to achieve better political awareness and better informed political decision making. *eco*BUDGET is local governments response to this call.

Reference - "The Aalborg Charter"

In 1994, the Charter of European Cities and Towns Towards Sustainability (the "Aalborg Charter") signed in Aalborg, Denmark, called for the introduction of environmental budgeting as an inherent part of local governments' governance:

"We, cities & towns, pledge to use the political and technical instruments and tools available for an ecosystem approach to urban management. We shall take advantage of a wide range of instruments including those for collecting and processing environmental data; environmental planning; regulatory, economic, and communication instruments such as directives, taxes and fees; and mechanisms for awareness raising including public participation. We seek to establish new environmental budgeting systems which allow for the management of our natural resources as economically as our artificial resource, 'money'." Aalborg Charter, Part 1.14

The European *eco*BUDGET pilot project, implemented from 2001 -2004, advanced previous experiences with environmental budgeting that had been obtained through a German pilot project. It forms the basis for this manual and serves as the starting point for a European and world-wide launching of the *eco*BUDGET concept. The local authorities from 5 European countries that have taken part in the European project are:

The **Municipality of Växjö, Sweden**, which has been the project's lead partner. With more than 75,000 inhabitants, Växjö is the regional capital of Småland, a region located in the middle of Southern Sweden. The focus of Växjö's *eco*BUDGET is to improve the structure of their environmental management and become a pioneer in sustainable development. The first *eco*BUDGET master budget was ratified in March 2003. The budget balance and second cycle were ratified April 2004.

The **Municipality of Amaroussion, Greece**, ratified their first master budget in October 2003 and are now preparing the budget balance and the second master budget. Situated just to the north of Athens, and with about 100,000 inhabitants, Amaroussion's LA21 programme deals with issues ranging from energy and urban planning to green purchasing, which has been included in their *eco*BUDGET. Amaroussion has also included indicators that take into account the 2004 Olympic Games, since a significant part of venues and infrastructures are located in the territory of the municipality.

With a population of approximately 370,000 inhabitants, the **City of Bologna** is the capital of the Emilia-Romagna region in northern **Italy**. Here, the focus of *eco*BUDGET is to become a communication instrument within the Local Agenda 21, thereby supporting the environ-

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mental communication amongst scenarios defined by a new structural plan. The city council ratified the first *eco*BUDGET in February 2003. The budget balance and second master budget were approved in March 2004.

The **City of Ferrara**, with 131,000 inhabitants, is located in the Emilia-Romagna region of **Italy**. Ferrara is one of Italy's (and Europe's) leading cities for sustainable development, and proved this by winning the Sustainable City Award 2003. The main task for its *eco*BUDGET is the integration of *eco*BUDGET, environmental accountability and Local Agenda 21. The first master budget was ratified in February 2003. In April 2004, Ferrara also ratified the budget balance for 2003 and master budget for 2004.

Lewes District Council, in East Sussex in the south of **England**, comprises rural villages and four towns with a total of approximately 89,000 inhabitants. Their *eco*BUDGET provided an opportunity for Lewes to expand some aspects of their EMAS and ISO 14001, by extending the scope externally in order to influence performance in the community. Lewes District Council ratified the first master budget in September 2002. The budget balance for 2003 and master budget for 2004 was politically ratified in April 2004.

The Municipality of Kalithea is situated at the northeast of the island of Rhodes in **Greece**. Founded in 1999, with a population of 10,000, this is the smallest and also youngest *eco*BUDGET municipality. The focus of Kalithea's *eco*BUDGET is to improve the general environmental situation and thus introduce the community to sustainable development. The Kalithea city council ratified the master budget for 2003 in February 2003. The budget balance for 2003 and master budget for 2004 were approved in February 2004.

The City of Dresden with approximately 478,000 inhabitants, is the capital of the Federal State of Saxony, **Germany**. Dresden took part in the first German pilot project on *eco*BUDGET, and thus serves as an important experience provider.

The City of Heidelberg, Germany, has around 148,000 inhabitants, and is visited by about 4 million tourists per year. As one of Europe's leading sustainability cities (winner of the Sustainable City Award 2003), Heidelberg also took part in the German pilot-project on *eco*BUDGET, and therefore has a similar role as Dresden.



Figure 2: Partners of the European *eco*BUDGET pilot project during the Aalborg +10 conference, 9-12 June 2004, Aalborg, Denmark

The **Environmental Protection Regional Agency of the Region Emilia-Romagna (ARPA)** in Italy has extensive experience in the technical fields of environmental protection, collection of data and the creation of indicator systems, thus being a scientific advisor, in particular to the Italian partners.

ICLEI - Local Governments for Sustainability is an international membership organisation of local governments implementing sustainable development. Together with Växjö, ICLEI has co-ordinated the European *ecoBUDGET* pilot project. Its mission is to build and serve a world-wide movement of local governments in order to achieve tangible improvements in global environmental and sustainable development conditions through cumulative local actions. The *ecoBUDGET*[®] method was originally developed by ICLEI's European Secretariat.

1.2.4 The *ecoBudget* cycle

As mentioned in the introduction of this chapter, *ecoBUDGET* is an environmental management system based on resource management and political and community involvement. The method imitates the cyclical approach of local financial budgeting and has been developed for, and tested by, local authorities, thereby becoming the first global environmental management system with particular emphasis on the special needs and requirements of politically steered organisations. This chapter will briefly explain the theoretical framework of *ecoBUDGET*. Part 2 of this manual - Practitioners' Guide to *ecoBUDGET* - will have a more detailed and comprehensive, practical presentation of the *ecoBUDGET* process.

While there are numerous similarities between the principles and functions of environmental and financial budgeting, there is also a more practical similarity between financial and environmental budgeting: that of their cyclical methodology - the decisive characteristic of all management systems. In free-economy and local authority financing, it is taken for granted not only that is data collected and reports written on the status quo, but also that measures are planned, their implementation monitored and statements of results produced, before the cycle recommences. Local environmental budgeting is an environmental management system that also follows these general cycles.

The decisive factor when using environmental management systems is to ensure that clear priorities and targets are set. Once this is done, measures must be planned and tasks allocated. Firstly, this encourages those with political responsibility to not only determine targets, but also to take responsibility for ensuring that they are put into practice. Secondly, the administration is put into a position from which it can actually implement the planned measures. Thirdly, all administrative units develop a sense of responsibility for their own environmentally relevant actions.

No programme of measures or unequivocal allocation of tasks, however detailed, has any value without a control mechanism to assist in monitoring implementation. For this reason, an internal mechanism is required to report on what has been implemented and what has still to be implemented. Corrective measures can be initiated at short notice during the cycle, and the result can be influenced in line with the specified targets.

In addition to implementation controls, each management cycle should provide for a situation evaluation at the cycle-end. For this purpose, data must be collected and processed to provide information that is easy to understand. Successes and failures, from which the focus of future action can be derived, are thus made visible. In this manner, financial and personnel resources can be used efficiently.

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Depending on their respective purposes, management systems may display great differences in the way their respective activities are programmed. However, as described above, these systems involve subsequent steps that they all share in common. In *eco*BUDGET, these are determined in what is known as the **environmental budget cycle**. The search for priorities and targets is an integral part of budget preparation. The planning of measures and the allocation of tasks on the one hand, and the monitoring of task fulfilment and the achievement of targets on the other, are parts of the implementation phase. The outcome is examined and the results reported by means of the environmental budget balance.

These steps are integrated into the *eco*BUDGET method, which is presented in Figure 3.

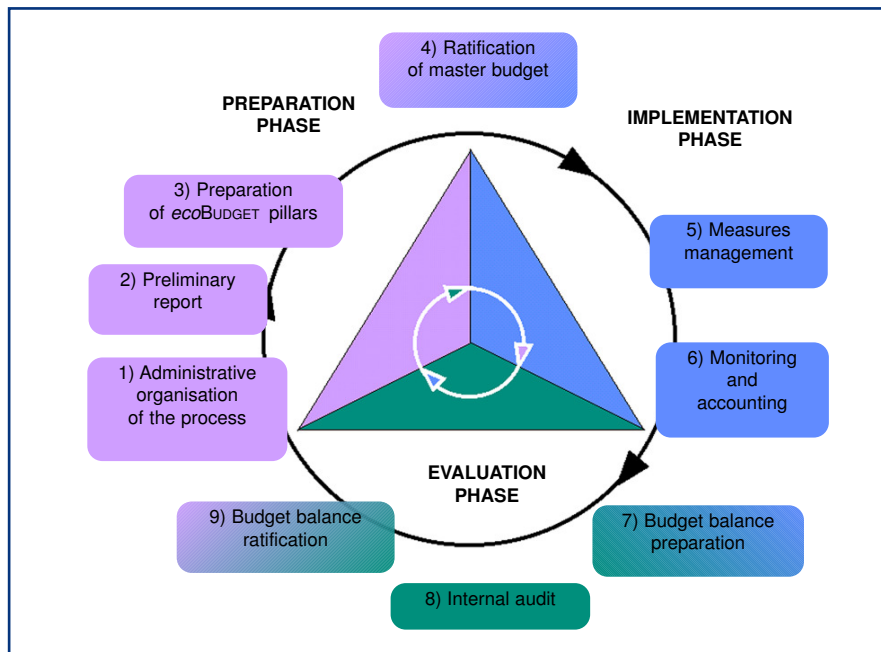


Figure 3: The *eco*BUDGET environmental budget cycle.

The three sides of the triangle represent the three phases of the environmental budget cycle: Preparation, Implementation and Evaluation. Only the combination of the individual steps in these three phases forms a system that is capable of adjusting resource usage to the requirements of sustainable development over time. The method as described here is, of course, an idealised presentation of the *eco*BUDGET cycle as, in reality, the different steps flow into each other or in some cases spread out over the entire *eco*BUDGET cycle. A prerequisite for the successful implementation of environmental budgeting is a deep understanding of the mutual dependencies that exist between the three parts. However, the figure illustrates the concept of continuous improvements through an annual cycle.

Inaugural Phase

As is the case for any new tool or process, setting up the *eco*BUDGET environmental management system for the first time requires the identification or establishment of appropriate

conditions within the organisation. This concerns primarily the identification and designation of units from the local administration and relevant social groups who will make a significant contribution to the success of environmental budgeting throughout implementation.

For a local authority to introduce environmental budgeting based on the *ecoBUDGET* model, a department or unit responsible for co-ordinating and implementing the *ecoBUDGET* process must be identified or created. Preferably, this should be an independent interdepartmental *ecoBUDGET* Co-ordination Team (or even an environmental budget department), centralised within the local administration structure. This *ecoBUDGET* Co-ordination Team should have the over-all responsibility for *ecoBUDGET*'s implementation and management, but may divide work among other departments or units, depending on the authority's normal practises and structures. However, environmental budgeting must be protected against marginalisation within the authority, and should therefore:

- be structurally sound,
- involve of representatives from influential and relevant departments (e.g. finance, audit agency, Local Agenda 21, statistics, environment, technical, planning or services), and
- have the political mandate to implement and manage *ecoBUDGET*.

It is necessary to generate initial political backing for *ecoBUDGET*, in order to achieve the allocation to the Co-ordination Team of the political mandate to implement and manage *ecoBUDGET*. This is done through a political resolution to establish the environmental budget. The council first passes a resolution in order to commission the local administration with the drawing-up of the environmental budget for the following year. This is standard procedure in financial budgeting as well as with other plans (e.g. for land use or planning approval procedures), and without it, the administration cannot take action.

For the first environmental budget cycle, this resolution will be an integral part of the decision to introduce *ecoBUDGET*. However, once the system is in place, this resolution will become part of the procedure of confirming the environmental budget balance at the end of each cycle, when the call to draw up the next budget can be dealt with at the same time. Seen like this, the first procedural stage should not be regarded as an independent work phase, but as linked to other procedural stages where appropriate.

The Preparation Phase, consists of four steps:

Step 1) *The Administrative organisation of the process* is a vital step, especially for the first *ecoBUDGET* cycle (cf. above). Vital structures in the local administration have to be set up or reviewed, such as a cross-departmental team, which will have the overall responsibility of managing and executing *ecoBUDGET*. Also developed here are the reporting structure and framework, as well as frameworks for managerial directives and internal audits.

Step 2) In financial budgeting, the *Preliminary report* accompanies the budget and explains the budget framework, in particular the factors governing changes in income and expenditure, as well as planned investments and their financial effects over the forthcoming years. Environmental budgeting adopts the function of the preliminary report and slightly extends its use. The transparency provided by the preliminary report of the environmental situation, of emerging legal or political frameworks, and of the development of individual environmental areas, allows trends to be deduced that specialists can compare with their own planning schedules, thereby enabling them to produce realistic values for the budget estimates. It

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records the expected changes both in environmental consumption and within the political and legal framework. During preparation of the environmental budget, this serves as the basis for the identification of resources, estimates of resource consumption by the administrative departments and for evaluation by the council and the public. The preliminary report also aims at identifying existing local environmental activities and initiatives, which can sanction or be strengthened by *eco*BUDGET (see Chapter 2.3.3 for more details on the contents of the Preliminary Report).

Step 3) Preparation of the *eco*BUDGET pillars, namely *the environmental master budget, the statement of environmental assets and the environment-benefit analysis*.

The establishment of the master budget is the result of the preparation phase and the steering document that politicians will refer to. The master budget contains:

- (i) The natural resources prioritised by the local authority for protection or effective management. Physical units using (environmental) indicators represent these resources.
- (ii) The long-term targets for these resources, which have been formulated on the basis of political decisions and/or scientific criteria, and are orientated towards the principles of sustainable development.
- (iii) The spending framework (i.e. limits) for the utilisation of designated resources within the forthcoming environmental budget year are represented by the individual indicators. These are known as "component budgets" with short-term targets and are prepared as an aid to achieving the long-term targets on the basis of the previous year's values, expected future events, and planned measures. Of particular importance here is the fact that both target values and the time by which they are to be accomplished are defined (time-related environmental targets). Together, the component budgets for the individual indicators form the environmental master budget.

In order to allow for a comprehensive view and evaluation of the local environmental performance, *eco*BUDGET introduces two more conceptual pillars, which mainly serve decision-makers' information needs. These have reporting functions and relate to local performance results in carrying out the master budget at the end of the budget cycle.

The statement of environmental assets provides information about the quantifiable local dimension of environmental resources, i.e. the "environmental capital", within a local authority's area. Similar to a "savings book", it contains a set of indicators which complement those of the master budget. On the one hand, it should set out positive ecological achievements, e.g. investments in the productivity and the usability of natural resources, evictions from nature reserves or an increase in the level of environment-related education. On the other hand, long-term trends should be indicated, which do not allow for direct conclusions regarding the state of the environment. For example, the state of raw mineral reserves can be monitored. The goal here is to show the maintenance and growth of assets in the way a 'savings account' would.

The environment-benefit analysis contains parallels to economic and social reporting. It serves to measure the efficiency with which the local authority utilises natural resources to satisfy human needs (e.g. work, living space, and mobility). Two questions are important when considering the effects of human activities on the environment. Firstly, how is the environment damaged? Secondly, how efficiently is an environmental consumption satisfying human needs? Although the first question is answered in environmental budgeting by the master budget and the statement of environmental assets, the second question is not considered in these aspects of the process.

The environment-benefit analysis offers an overview (supported by indicators) of the relationship between environmental consumption and the given level of satisfaction of human needs such as employment, living space, consumer activities, mobility, etc., that is achieved as a result of this consumption. As a result, the view that resource consumption is a basic prerequisite for human existence and economical behaviour is reinforced. To achieve sustainable local development, the availability, or in other words, the efficient use of scarce goods is crucial.

The environment-benefit analysis enables environment-related evaluations of local activities to be divided into their social and economic aspects. It allows progress in sustainable local development to be reviewed, and also constitutes an important part of the interface with the Local Agenda 21 process. Moreover, the environment-benefit analysis and its contents can be related to the discussion of environmental efficiency.

Both the statement of environmental assets and environment-benefit analysis should be related to the master budget in order to effectively reflect the development during the subsequent budget year. The structure of both elements is set up in the preparation phase, in line with the master budget. Together with the annual balance, taking stock of the achievements of the master budget's implementation, they form the environmental budget balance (see also Step 7) at the end of the budget cycle. Politicians, administration and the public, through stakeholder forums for example, can discuss and validate resources, short- and long-term targets and indicators that will be included in the *eco*BUDGET Master budget, and indicators that will be included in the statement of environmental assets and the environment-benefit analysis. Also important is that targets and indicators clearly reflect local resources, that priorities are clear, and that possible financial trade-offs or implications are identified.

Step 4) *Master budget ratification*, concludes the preparation phase. The success of *eco*BUDGET depends to a great extent on how seriously it is recognised as a tool for political management. Council discussion, debate, and opinion forming in preparation for a political decision are therefore central aspects of the procedure. Existing problems and contradictions should be outlined in the textual explanations (explanatory report). The council will normally refer the draft resolution to the specialist committees (environmental panel, finance committee, executive committee, etc.) for discussion and review.

In parallel, the draft should be fully discussed in public. The draft document should be put at the citizens' disposal, either through local Agenda 21 committees, local media and/or the Internet.

If changes are required that are too substantial to be marked as amendments on the draft resolution, the environmental budget must undergo a further round of editing and approval.

Once senior management has approved the agreed draft, a draft resolution for the council is formulated, including the environmental budget - the actual object of decision - and the (modified) explanatory report (see Chapter 2.3.4 for more details on the political ratification). The draft resolution is then placed on the agenda of a forthcoming council meeting and sent to the councillors, as described by the *eco*BUDGET circle.

Political ratification makes the environmental budget binding for the local authority and the participating actors, and in this way the budget becomes an integral and therefore compulsory aspect of administrative decision-making. Targets and budgets should be taken into account in all decisions and planning processes. From this point of view, elected representatives are politically bound by the environmental budget, and administration is bound to the implementation of measures to reach the set objectives and targets.

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The Implementation Phase

The political ratification of the master budget initiates the implementation phase, here described by two steps that are more or less ongoing throughout the *eco*BUDGET cycle:

Step 5) *Measure management* refers to the responsibilities and schedules relating to individual measures that must be agreed on within the local administration. This is best carried out by the head of the individual departments and then confirmed through normal management channels. The instruction to begin this step is ratified by the *eco*BUDGET Co-ordination Team, which also reaches agreements with participants from outside the local administration. Self-imposed targets and voluntary commitments must be given a concrete form through the announcement of planned measures that are to be implemented in the subsequent environmental budget year.

A strategic plan should be produced which sets out the priorities for the implementation of measures and contains all relevant information, such as responsibilities, contact partners, obligations for communication and regulation etc.

Once the management of data flow and mandatory reporting has been laid down during *eco*BUDGET's setting-up, the *eco*BUDGET Co-ordination Team can start to record the events that have actually occurred. In *eco*BUDGET, this is referred to as accounting. Part-time accounts report on developments during the budget period and, if needed, suggest corrective measures, in order to take corrective action in case some measures have an unwanted effect or do not achieve the expected results.

Step 6) *Monitoring and accounting*. Implementation status and environmental progress are continuously recorded in the accounts. Accounting, supported by the monitoring and reporting mechanisms of the individual indicators, allows the local administration to recognise early on, whether the environmental budget values are being adhered to. The budget monitoring and accounting mechanisms also ensure that deviations are documented at an early stage. To facilitate discussion and correction, or to enable political legitimisation by council resolution, senior management is informed about all substantial predicted or occurring unbudgeted expenditures.

The Evaluation Phase

At the end of the environmental budget year, the *eco*BUDGET Co-ordination Team concludes the accounting and draws up the annual balance in the *evaluation phase*, which comprises three steps:

Step 7) Budget balance preparation includes the following components:

- (i) the annual balance (compiling annual accounts from individual accounts) provides information on whether or not the previous year's budget was adhered to or not;
- (ii) the statement of environmental assets, and the environment-benefit analysis, supplement the snapshot of the local authority's degree of sustainability.

Step 8) The *Internal audit* evaluates the local process and its outcomes. By comparing the annual balance and long-term target values, it becomes clear how close the local authority is towards achieving its set goals. A distance-to-target index indicates the ground already covered on the way to the long-term target. This evaluation also targets the process itself and can thus identify areas for improvement or change. The evaluation of how the authority has achieved its targets also forms the basis for improvement in priority-setting and measuring

implementation.

Step 9) The *Budget balance ratification* is similar to the master budget ratification; this process validates and confirms the work carried out during the past year. It will also form the basis for future changes both in the actual process and the identified resources, targets and indicators. The budget balance contains the elements "statement of environmental assets" and "environment-benefit analysis", which will comprehensively present the *ecoBUDGET* work in environmental, social and financial terms. As this is the final step of the *ecoBUDGET* year, the results of the budget balance will inform the preparation of the following cycle. With the environmental budget balance, the administration is not only accountable to the council, but also, through the council members as elected representatives, to the public. It therefore serves both internal political debates and public discussion.

New Budget Cycle

The above chapters have described the *ecoBUDGET* process from a practical perspective. As mentioned earlier, each local authority faces different situations, realities, requirements, needs and demands, and therefore each *ecoBUDGET* process is individual. However, the stages or steps of the *ecoBUDGET* cycle are similar for any *ecoBUDGET* authority. The differences lie in the matter or method by which these steps are performed.

The final stage of the *ecoBUDGET* process is simply a re-launching of the previous cycle. The budget balance and adhering performance analysis will supply the subsequent year's budget with vital information and data, which will make this cycle increasingly effective and well prepared. Account procedures and monitoring processes will be enhanced by previous years' experiences, debates and discussions, and will profit from the knowledge and experience gained. Targets and measures can be rectified, improved or amended, based on the year's results. However, the most important feature is the fact that *ecoBUDGET* adheres to the concept of continuous improvement and promotes the framework for a learning organisation through a cyclical approach. This engages and empowers dispersed departments and entities of, not only the authority, but also the entire community. A final conclusion is that the next *ecoBUDGET* cycle will, not only have the opportunity to excel over the previous year's budget, but also to be more effective than the previous cycle.

1.2.5 The scope of *ecoBUDGET*

Environmental problems do not normally stop at regional administrative boundaries. Natural or economic interactions and responsibilities regulated by legislation display varying effectiveness with respect to environmental budgeting for individual resources. This leads us to the question of who can be reached, and what can be achieved and influenced with *ecoBUDGET* and where its technical and spatial scope is situated. As a basic rule, we must admit that the scope of environmental budgeting and consequently the possibility of influence by the local authority are cascaded (e.g. through the different actors, or local/regional/national/global level). The regulatory function prescribed by law certainly offers the largest direct opportunity for the local authority to exert influence. However, this regulatory approach does not correspond to the approach of Local Agenda 21, which includes negotiations, agreements and private commitments. The local authority, therefore, will only be successful in the long-term if its own behaviour is exemplary ('role-model approach'), if it actively promotes resource-saving and third party measures (with conceptual and financial

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support), and if it nurtures communication and co-operation between local authorities and other community actors and stakeholders.

The thoroughness with which environmental consumption is controlled and made transparent by *ecoBUDGET* ultimately depends on aspects of the individual case; i.e., on a local authority's "will to control". Using *ecoBUDGET* as an environmental budgeting method for local natural resources as required by the Aalborg Charter provides the local authority, as a promoter of sustainable development, with a comprehensive approach orientated towards the guiding principle of sustainable development.

1.3 ecoBUDGET - an applicable approach

The process of financial budgeting has been widely adopted around the world, particularly in the European Union, where rules and regulations are becoming more and more streamlined. However, a deeper analysis of financial systems reveals rather large differences in the approach to the budgeting process. There are not only large differences in accounting and reporting procedures, responsibility allocation, transparency and definitions, there are also substantial differences in fundamental principles such as annuity. It is then rather clear that a system like *ecoBUDGET*, imitating financial budgeting, will encounter similar differences. The following chapter is dedicated to explaining these situations while presenting ways and measures for overcoming comparable hurdles. The chapter will begin the outlook based on three key issues for a European context: geographical flexibility, cultural differences and political differences. The chapter will conclude with a section on European transferability where more generic differences are presented.

1.3.1 Geographical flexibility

Europe is becoming increasingly integrated, not only through the European Union and the Schengen agreement, but also through faster and better communication (such as the Internet) and through increased mobility of people and services. More and more people are bi- or multi-lingual. Yet these factors have not changed the fact that Europe is dispersed geographically. Europe ranges from large arctic forests in the North to semi-deserts and brush lands in the South. There is an array of different land types: mountains, river basins, forests, marsh lands, farm lands, coastal areas, along with substantially different urban areas. This naturally leads to a magnitude of different environmental problems, but also to very different relationships to targets, solutions and organisation. From a system perspective, it is important to understand how *ecoBUDGET* deals with issues related to geographical differences.

The *ecoBUDGET* methodology has been designed as a tool specifically for local authorities, not businesses or industry. From a European perspective, and also worldwide, there are a multitude of local authorities of different sizes and functions with different political and administrative structures and systems. For instance, the present *ecoBUDGET* cities consist of 11 local authorities from 5 different countries. The size of these authorities ranges from 10 000 to 478 000 inhabitants, see table 4.

How does a system like *ecoBUDGET* function with equal effectiveness for authorities with such considerable differences? The answer to this lies in the flexibility of the system. A smaller authority - e.g. Kalithea, has fewer employees, thus shorter communication paths than a large authority like Dresden or Bologna. When implementing *ecoBUDGET* Local

Authorities are encouraged to use existing systems and structures, e.g. communication systems and reporting mechanisms. This gives the authority freedom to design the administrative parts of the system in a fashion that suits its needs and abilities.

Organisational experiences: Municipality of Växjö, Sweden, and Municipality of Kalithea, Greece

The Municipalities of Kalithea and Växjö are not only very different in size and population, but also in terms of history, culture, language, structure, organisation and environmental awareness. The creation and implementation of an environmental management system therefore faces completely different foundations and requirements. However, both Kalithea and Växjö have been successful in using ecoBUDGET as a political and administrative environmental management system.

Kalithea, being a newly formed municipality and very small both in size and population, lacks immediate and major environmental problems. They have chosen to use their ecoBUDGET to safe-guard against future problems, i.e. through increasing awareness and preparedness. Having few employees, Kalithea naturally has different needs in terms of system structures since the municipality is already organised in a way that suits their needs and possibilities. The number of departments is also limited, not only because of their size, but also because administrative and practical responsibilities of the municipality are fundamentally different from those of Växjö. Kalithea has created a centralised management system with input from departments that also are rather central.

Växjö on the other hand has a decentralised approach. This is a large municipality with vast responsibilities that also has numerous, fairly autonomous departments and municipally owned companies. The ecoBUDGET system in Växjö is thus created with a central element but also a number of decentralised indicators and targets.

As can be seen in table 4 the area of the administrative jurisdiction of the authorities differs from 14 to 1 674 km². This demonstrates that the effectiveness of *ecoBUDGET* is not limited by the geographical size of the authority. As previously discussed, the system was created with an external, geographical focus, i.e. not limited to the authority's internal performance, but also considering the wider community. By having this capability, *ecoBUDGET*

AUTHORITY	SIZE (km ²)	POPULATION
Växjö	1 674	75 000
Amaroussion	14	100 000
Bologna	141	371 000
Ferrara	404	131 000
Lewes	292	89 000
Kalithea	110	10 000
Dresden	328	478 000
Heidelberg	109	148 000
Kaiserslautern	140	99 000
Nordhausen	710	97 000
Bielefeld	258	329 000

Table 4. Approximate size and population of ecoBUDGET authorities. Observe that some population figures refer to the city, whereas the size relates to the administrative area.

***eco*BUDGET -an applicable approach**

enables geographically large authorities to include indicators and targets for their entire area and also for activities that are out of their direct control - e.g. Växjö has an ambitious target of CO₂ reduction in the entire municipal area (motto: Fossil fuel free Växjö).

1.3.2 Cultural and political differences

From geographical differences quite naturally flow cultural, political and language differences. Although current experiences with the *eco*BUDGET methodology suggest wide acceptance at an international scale, as a result of its suitability and its similarities to financial budgeting, world-wide adoption will necessitate availability of the concept and supporting documents in different languages. The concept so far is being made available in English, German, Swedish, Italian and Greek. Outside Europe, the concept has been translated into both Japanese and Korean. Translation into further languages will follow based on need and opportunities.

Cultural and political differences are somewhat more difficult to pinpoint. It is obvious that different countries, regions or areas have different cultures in, for example, their administrative and community organisations, communication styles, environmental awareness, infrastructure and technical history. To address each of these issues individually would be an almost impossible task. *eco*BUDGET has therefore chosen to adapt to this by limiting the number of key requirements (see Chapter 2.3.1). By not having a detailed and formalised requirement for structural set-up of the system, each authority can create a system based on its own internal and external needs and possibilities. The flexibility of this method allows for different set-ups, everything from a completely centralised management system to a totally decentralised and differentiated approach.

In other words an authority can adhere to its current organisational structure and adapt *eco*BUDGET to it. However, in the case where an authority might lack an organisation for environmental initiatives, *eco*BUDGET can be a supporting tool to formalise and structure this work, either by building up such a system or by utilising routines from other management systems.

It is of course not possible to argue that *eco*BUDGET can overcome the financial constraints faced by local authorities engaging in environmental initiatives. What the system can do is, through links with financial budgeting, create more visible possibilities in terms of savings and benefits (including indirect gains) of environmental work. Many local authorities are used to calculating return of investments based on community gains from such things as a new recreation centre or a new sports complex. Identically, a local authority could calculate the benefits from establishing a nature preserve or other environmental initiative by evaluating community gains and well-being.

It is commonly accepted that changing behaviour and values is a long and difficult process. However, a key element in affecting behaviour and values with regard to the environment is increased awareness. Through allowing politicians and the public to identify priorities and allocate resources that are of importance for the local community, *eco*BUDGET secures public and political interest and commitment to the chosen issues. In this way, the system can initially deal with immediate and obvious problems for the community. By evaluating and communicating what initiatives are being undertaken and what progress is being made in the authority, initiated parties will gain knowledge, experience and hopefully also motivation to take the system further by including more far reaching targets and indicators. Finally, the transparency of *eco*BUDGET will also facilitate relative comparison between authorities,

allowing for developing authorities to copy initiatives and approaches from pioneer authorities.

1.3.3 European Transferability

The above mentioned arguments suggest that *ecoBUDGET* is fully transferable on an international scale. Considering the fundamental differences among current *ecoBUDGET* authorities in Germany, Greece, Italy, Sweden and the UK, it is safe to assume that *ecoBUDGET* will prove equally adaptable in other contexts around the world. This is even more important, as European policies and strategies require transfer at the local level, be they voluntary or mandatory. Moreover, international sustainability oriented strategies will boost implementation of environmental management systems in public authorities. As an example, the Aalborg Commitments, adopted by participants of the European Sustainable Cities and Towns Campaign in Aalborg, Denmark in June 2004, literally call for an effective management system on the local level. As a political framework system for local environmental management, targeted at the entire geographical area of a municipality, and including stakeholder involvement, *ecoBUDGET* is an effective means of carrying out the Aalborg Commitments process.

Signatories agree to apply a number of objectives, such as



Figure 4:
The geographical distribution
of *ecoBUDGET* authorities in
Europe.

- Increased participatory democracy
- Assuming responsibility to protect, to preserve, and to ensure equitable access to natural common goods.
- Prudent and efficient use of resources and encouraging sustainable consumption and production.
- A strategic role for urban planning and design in addressing environmental, social, economic, health and cultural issues for the benefit of all.
- Protecting and promoting the health and well being of citizens.

They also commit themselves to move into a participatory target setting starting with a baseline review. Within 24 months following the date of signature they set time-related local targets for commitment grouped under 10 themes and provide for a future monitoring review of the progress achieved. This basically establishes a management process for local governments as being provided by *ecoBUDGET*.

ecoBUDGET -an applicable approach

The European Commission consider "*in the long-term, active and integrated management of environmental issues for the whole urban area is the only way to achieve a high quality and healthy urban environment. Explicit environmental targets, actions and monitoring programmes that link environment policies to economic and social policies are required. Urban municipalities therefore need to put in place an environmental management plan. To ensure its implementation and monitor its progress, they need to adopt an appropriate environmental management system.*" To this end, the Commission currently is developing a Thematic Strategy "Towards the Urban Environment" to come up in June.

ecoBUDGET corresponds to this strategy through its inclusion of community involvement, political commitment, local relevance, local target setting, resource management, monitoring and controlling, structure and transparency. The *ecoBUDGET* concept and current *ecoBUDGET* authorities are already answering the call of the Urban Thematic Strategy, even though it is not yet being enforced.

Part 2 Practitioners guide to *eco*BUDGET

2.1 Using this guide

The aim of this guide is to support everyone involved in implementing the *eco*BUDGET process at the local level. The guide can be followed step-by-step by the *eco*BUDGET team appointed to co-ordinate the complete series of activities, but also by other actors involved in the implementation of a local *eco*BUDGET (be they politicians, administrators, technicians or stakeholders) who seek assistance in one or more of the phases of an *eco*BUDGET cycle.

2.1.1 Structure of the guide

This guide follows, step-by-step and in a detailed way, nine stages that together comprise an *eco*BUDGET cycle. The steps themselves are divided into three phases: preparation, implementation and evaluation. This division corresponds to Chapters 2.3 to 2.5 of this guide. Beforehand, Chapter 2.2 is devoted to the so-called inaugural phase, that is the activities introducing *eco*BUDGET as a framework system for local environmental management into the local governments' procedures. These are to be done in the first year, just after adopting of the system.

Each paragraph representing an *eco*BUDGET step presents the main activities to be undertaken by the different actors involved, so as to comply with the step's requirements. Examples, tables, templates, tips and references are provided.

An overview table summarising the main tasks to be performed by the principal groups of actors will be included at the end of each step (including the inaugural phase). The following actor groups are considered: senior management, politicians, technicians and public stakeholders. In order to avoid misunderstandings originating from the different categories and administrative structures in the diverse countries, the following definitions are provided for the purposes of this book:

- **Senior management**, in some cases also referred to as administrators, are the governing politicians, namely the mayor and the other politicians appointed or elected to a specific department (often referred to as deputy mayors). Administrators represent the heads of the executive part of a local government. This definition is subject to slight differences in interpretation. Whilst in Southern Europe, mayors and deputy mayors are generally elected at the same time as the city council and hence are usually members of the majority party or coalition. In Germany and in Northern Europe they are elected through the proportional representation of the main parties represented in the city council, independently of whether they are from the majority or the opposition party. This difference has to be taken into account when implementing *eco*BUDGET.
- **Politicians** are primarily the city council members, i.e. the elected representatives of the citizens. They are directly involved in the ratification of *eco*BUDGET's decisive steps. The same term also refers to the members of the local parties, which can be involved in different stages of the system.
- **Technicians** are those employees of the administration involved in the *eco*BUDGET procedure. This category also comprises advisors to the administration as well as staff

from service companies (municipally owned or contracted) with specific responsibilities in the process.

■ **Public stakeholders** comprise a rather open category including corporations like industry, financial institutions, commerce, as well as trade unions and non governmental organisations (NGOs), local committees, forums, associations, and other more or less organised groups from civil society. Of course, the contribution of these actors to *ecoBUDGET* can be commissioned by a Local Agenda 21 (refer to Chapter 3.2).

It goes without saying that the tables present general examples and that categories may vary depending on the local circumstances. Moreover, the categorisation of the actor groups can encounter slight differences according to specific national framework conditions. The tasks of the Co-ordination Board and of the Co-ordination Team are not mentioned explicitly in the tables. This is because their roles are of primary importance and remain continuously important throughout the entire cycle.

Two observations shall complete these initial remarks. Firstly, for sake of simplicity we refer to City Council, whenever the core political body of a local authority is addressed. Needless to say, the term City Council embraces other forms of political representative bodies in local authorities, namely District, Province, County or even the Regional one according to the administrative level under which *ecoBUDGET* is implemented. Secondly, it is important to remember that the sequence of steps and their development as shown in the guide is only indicative. Experience shows that *ecoBUDGET*'s implementation can vary according to context.

2.1.2 Overlapping phases

Part 1 stated that *ecoBUDGET* is an annual cycle. A more exact formulation would specify that *ecoBUDGET* is a cycle with an annual reoccurrence. In practice however, the ideal situation of one cycle being completed before a new one begins does not really occur. Depending on availability of data and information, subsequent *ecoBUDGET* cycles can overlap in part. This means that the preparation phase of the subsequent year's budget may overlap with the implementation phase of the running budget year. Figures from the previous environmental budget balance are available for this purpose. Consequently, the evaluation phase may be completed at the beginning of the subsequent implementation phase. The conclusion drawn from this flows into the following budget. This follows the necessary process flow and does not cause problems for carrying out any of the steps mentioned. Figure 5 visualises this concept. It refers to an *ecoBUDGET* procedure aimed at ratification at the end of the calendar year.

Despite the time lag, the data available from the previous year is highly relevant to the preparation of the new budget because, in the majority of cases, environmental changes (positive and negative) occur gradually, not suddenly. As *ecoBUDGET* does not require unique and irreversible decisions to be made, but instead establishes a durable management system for natural resources, the overlap effects described above can be accepted without the loss of medium-term control.

Depending on the size of the local government and the number of actors involved in implementing *ecoBUDGET*, the duration of preparation and evaluation phases may vary.

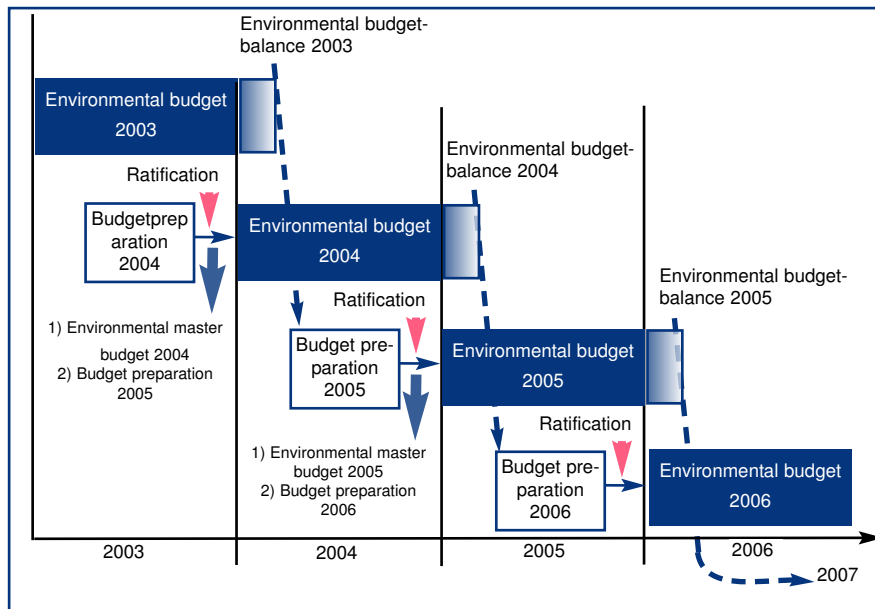


Figure 5: Overlapping of cycles and phases during the years (simplified)

2.1.3 *eco*BUDGET requirements

Even though *eco*BUDGET's flexibility has often been underlined as important to its success, a number of steps are regarded as key to the establishment of an *eco*BUDGET.

Compelling local authorities to follow the guidelines in a too rigid way could be counterproductive. Nevertheless, some structure is necessary to guarantee commonality and identity of what is called *eco*BUDGET. Consequently, the suggested sequence of nine steps shall be regarded as recommended for a successful implementation of *eco*BUDGET. While following these steps, it is important to adjust elements of the procedure to local conditions and procedural habits.

Suggested and compulsory steps in *eco*BUDGET

1. Administrative organisation of the process
2. Preliminary report
3. Pillars of *eco*BUDGET
4. Ratification of master budget
5. Measures management
6. Accounting and monitoring
7. Preparation of budget balance
8. Internal audit
9. Ratification of budget balance

INAUGURAL PHASE

In order to clearly identify and qualify *ecoBUDGET* as such, some of the steps are considered compulsory. This also allows the certification of applicants as *ecoBUDGET* city (province, county, etc...). Generally spoken, this applies to one step per phase (since Step 4 is the logical consequence of Step 3 and represents the distinctive "stamp" of *ecoBUDGET*). This concept of required steps certainly does not suggest that other steps are of less value or can be neglected. The "compulsory" steps are simply those most suitable to be documented with standard templates. They are the ones which allow for the recognition of *ecoBUDGET* as such. The box above illustrates which of the steps are compulsory (in black)

2.2 The inaugural phase: Introducing *ecoBUDGET*

This chapter highlights the particularities of *ecoBUDGET* in the year of its introduction. What happens during the inaugural phase of introducing the new instrument? Which are the activities specifically needed at the outset? What are the particular efforts to be distinguished from the routine application of *ecoBUDGET*?

Getting started

Some elements are key to starting a successful *ecoBUDGET* implementation, no matter who leads the initiative - whether a mayor, a head of department, politicians in the city council or, for instance, the Local Agenda 21 Forum wishing to integrate its action plan into local policies by using an environmental management system.

The Vote of the Council

At the outset of *ecoBUDGET*, it is important that the city council decision legitimates the introduction of the system during an official council meeting. Normally, this is prepared by a presentation of the system to the city council. It is recommended not to have a council decision on the system's introduction together with a ratification of the first environmental master budget. The box below presents an example for a draft council decision. This is to help focus decision-making on the benefits of the instrument per se, without being distracted by overlaying discussions on indicators and targets. Crucial is merely that the city council members understand the functioning and the aims of the *ecoBUDGET*, and adopt it as their environmental management system. It may be an idea to first introduce *ecoBUDGET* as a pilot project for a period of at least 3-5 years, in case council members wish to first gain experience before deciding on an unlimited implementation.

The broad support and appraisal of the council is key to a smooth implementation, as well as the best possible use of the functionality of a management system. Therefore, it is important to ensure sufficient prior information and debate. With this approach, a common basis and a solid foundation for coming years will be laid. Hence, it is important that this phase is prepared in detail and that before the meeting, mayor and senior management staff are fully convinced about the adoption of *ecoBUDGET*?

*Draft Decision
for decision by City Council*

*1.2 Subject
Introduction of ecoBUDGET - method for local environmental budgeting - for management
of sustainable development in City of*

Proposal for Decision

- 1. City of decides introduction and application of the environmental management system ecoBUDGET based on the enclosed model of organisation.*
- 2. The administration is commissioned to elaborate appropriate managerial directives to introduce and apply ecoBUDGET.*
- 3. City of decides to establish an environmental master budget for the year 200X. The administration is commissioned to prepare a resp. draft master budget and to present this draft for decision through the City Council.*
- 4. After ratification of the environmental master budget 200X the Committee / Committees of [name committee] is to be provided with a report on results of implementation of the environmental master budget on completion of each quarter, tertiary, at least after six months. The City Council is to be provided with an environmental budget balance report on completion of the budget period.*

Mr/Ms

Head of Department

ecoBUDGET Co-ordination Team

The **ecoBUDGET Co-ordination Team** is - in a similar way to the finance department - the central agency responsible for drawing up and following up on the implementation of the environmental budget and the environmental budget balance. This role may be given to an existing department or to a department or office specially created for the task:

Criteria regarding functionality need to be considered first. The independence of local environmental budgeting from resource-use interests must be guaranteed. For example, the *ecoBUDGET* Co-ordination Team's functions should not be transferred to building authorities. Furthermore, environmental budgeting tasks indicated within the department's task profile and the job profile of the employees involved should not be combined with other tasks involving the use of resources.

In addition, environmental budgeting must be protected against leading a merely marginal or shadow existence in the "hum-drum" of interdepartmental tasks and interests if it is to do justice to its purpose - that of anchoring sustainable development within an area of political and administrative responsibility. For this reason, it must be structurally sound in the way it is set-up. This can be achieved by locating the environmental budgeting process in an influential position within the local administration's structure, by associating the process with a traditionally important department, or, depending on the local situation, by transferring the functions to an exceptionally committed person within the corresponding area of responsibility.

Local conditions must be taken into account when the decision is made; a general recommendation cannot be made for the large range of different situations. Taking the implementation

**INAUGURAL
PHASE**

and conceptual approach of local environmental budgeting into account, the following organisational solutions can be applied:

1. Establishment of an independent interdepartmental *eco*BUDGET Co-ordination Team on an equal footing with the finance department.
2. Transfer of the *eco*BUDGET Co-ordination Team's functions to the finance department, the accounting office, or the audit department.

<i>Existing departments</i>	<p><i>in particular:</i> <i>Finance department, accounts office</i> <i>Main office, administration office,</i> <i>Audit office</i> <i>Environment office</i></p>
<i>Departments to be created</i>	<p><i>for example:</i> <i>Staff office for the senior management</i> <i>Environmental budgeting office, or department</i> <i>Environmental audit department.</i></p>
<i>Functional criteria</i>	<p><i>Independence from resource-user interests</i> <i>Independence from resource-using departments and tasks</i></p>
<i>Strength criteria</i>	<p><i>Functional link with a central interdepartmental agency, e.g. the staff office of the head of departments</i> <i>Transfer of functions to an existing department with a solid structure and an interdepartmental mandate, e.g. the finance office</i> <i>Transfer of functions to an existing, "strong" department, e.g. where there is a strong head of department</i> <i>Transfer of functions to a technically competent department, e.g. environment office</i></p>

Establishing an *eco*BUDGET Co-ordination Board

The main task of the inaugural phase is to create the best possible conditions to carry out the cyclic procedures of *eco*BUDGET. Therefore, different roles have to be assigned at the outset of the system's introduction.

Often, there will be an initiator of *eco*BUDGET in a local authority, a champion, someone who wants an initiative to be undertaken. This introduction may result in the unofficial proposal of preparing the adoption of *eco*BUDGET within the local government in question.

Thereafter, it is beneficial to select appropriate persons to form an **ecoBUDGET Co-ordination Board**. The Board will play the central agency role responsible for supervising the whole *ecoBUDGET* implementation process. Ideally, it comprises a group of 5-10 high-level local government members (depending on the size of the administration), including politicians and managers. Participation in the Co-ordination Board should follow a cross-departmental approach including representatives from all departments relevant for the management of natural, human and financial resources. Participants could represent, e.g., the transport department, public works, energy supply, etc., but also, the financial department. It is crucial to involve the Chief Executive Officer. This position does not exist in some European countries, but can be described as the senior urban manager in charge of the local authority's administrative, and usually in close contact with the mayor.

2.2.1 The Particularity of the first Cycle

The first year's preparation phase of the first *ecoBUDGET* cycle - which is regarded as the inaugural phase of introducing *ecoBUDGET* - shows some differences to subsequent cycles. This will most likely prove true for the entire first *ecoBUDGET* cycle. Immediately after the system's adoption by vote of the council, a pre-preparation phase starts setting up the procedures and organisation of *ecoBUDGET*. This set up will be evaluated and revised, if appropriate. Figure 6 provides an example of an *ecoBUDGET* management.

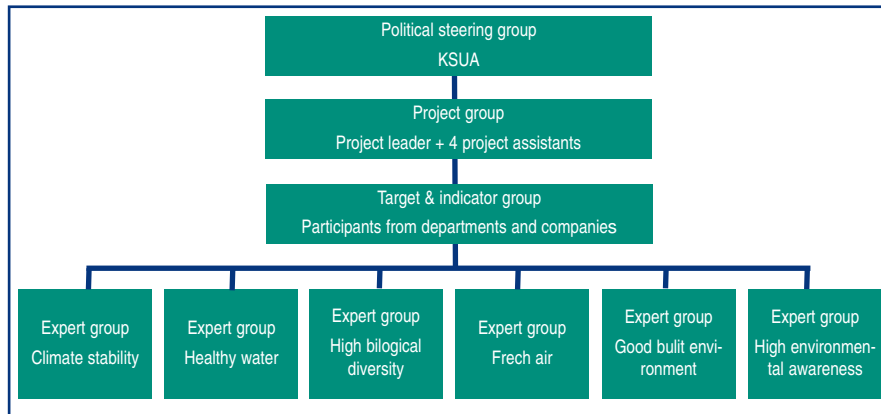


Figure 6: Växjö organisation of the *ecoBUDGET* management.

As is the case for any new tool or process, setting up the *ecoBUDGET* environmental management system requires the establishment of appropriate conditions within the organisation. Step 1, *administrative organisation of the process*, is therefore very important. It is concerned with the assignment of roles, the sharing of responsibilities and competencies, process flows, deadlines, methodologies, etc., as well as the training of units from the local administration and relevant social groups who will make a significant contribution to the success of environmental budgeting throughout its implementation. In addition to establishing responsibilities, a unhindered communication and information flow must be guaranteed. In other words, a reporting system needs to be created. Training helps the participants become accustomed to their new tasks and appreciate the importance of their contribution, while managerial directives establish the purposes and prerequisites of the process. Clarifying and accomplishing these prerequisites involves a "one-off" effort at the beginning of *ecoBUDGET* introduc-

INAUGURAL PHASE

tion. In general, these elements will remain the same in later *ecoBUDGET* cycles and not involve additional efforts every year. However, they will be "checked" against experiences and modifications in the administration in order to ensure that the organisational and procedural set-up best meets the requirements of the administration.

This is also true for Step 2, *preliminary report*. As of the second year, the evaluation phase concludes with a report that includes results of previous year's monitoring and the previous cycle's accounting activities. On the other hand, the preliminary report of the first year (that we shall name the *inaugural preliminary report*), aims at being a detailed analysis of the existing state of the local environment (more in Chapter 2.3.2).

The third step showing significant differences to the regular *ecoBUDGET* cycles is referred to as *preparation of ecoBUDGET pillars*. This phase comprises a fundamental debate of and agreement on the characteristics and building blocks of the local *ecoBUDGET*, i.e.:

- an analysis of the main environmental issues;
- an identification of the political priorities to be reflected in the local *ecoBUDGET*;
- a selection of natural resources represented in the environmental master budget, the statement of environmental assets and the environment-benefit analysis;
- a selection of indicators able to describe the resources selected for the three pillars of *ecoBUDGET*;
- an agreement on long-term targets for these indicators;

In the lead up to the first environmental budget cycle, the conceptual foundations of *ecoBUDGET* technical structure represent "pioneer work" for the involved technical departments and political decision-makers. This work requires a high degree of input, both in terms of technical capacity and time. Even though the priorities and contents of the local *ecoBUDGET* - i.e. those used in *ecoBUDGET* environmental master budget, statement of environmental assets and environment-benefit analysis - will always be subject to evaluation and revision, this first agreement is of outstanding importance. Not only does it determine the broad agreement to the management system as such and hence the motivation and contribution of all actors involved. More than that, it gives direction as to what the focus of the environmental policy will be at the start off of *ecoBUDGET*. Apart from the implementation of individual improvements, this work effort eases, however, in the following environmental budget year. Experience shows that - except for minor changes to some indicators - priorities and structure of the environmental master budget remain constant according to the time scale of the long-term targets established, and require modification only in exceptional cases.

In short, one can say that some of the preparation phase's activities require special effort and attention. By the second cycle, efforts will merely consist in the consideration of the previous evaluation phases' results and reports.

The image shows that in practice, after the first cycle, Steps 1 and 2 are simply "verified", while Step 3 considers results of previous reports and focus on the annual needs - i.e. to set up annual targets.

2.2.2 More "first times"?

So far, we have identified the peculiarities of the first cycle, but it must be stressed that some events can lead the local administration to re-consider the initial basic pillars on which the process is based.

On the "nature side", it is possible that extraordinary events, e.g., natural catastrophes or serious changes in natural resource patterns, impose a radical change in resources, indicators and long-term change structures. Some indicators may prove insufficient to describe a resource, a long-term target may be too optimistic to be met, or a major project (e.g., a new motorway or power plant) is to be realised against the will of the local government.

A political change in the local authority may determine new priorities in the city's environmental policies. This is likely to cause a change in the local priorities and, hence, impact the structure of the environmental master budget.

Eventually, the system's routine internal audit (Step 8) may suggest modifications in the organisation or procedure (roles, responsibility structures, tasks, deadlines, methodologies, etc.). In this case, a comprehensive revision or even reconsideration of the organisation will have to be undertaken in Step 1 (*organisation of the process*).

In order to ensure functionality, it may generally be beneficial to decide from the very beginning to evaluate and re-consider the local *ecoBUDGET*'s organisation, procedures and characteristics after a certain number of years (much like with a "five-year-plan"), or that such modifications can happen "on demand". In any case, it is crucial that any major change affecting the characteristics of the local *ecoBUDGET* (in particular the introduction of new indicators and alterations in long-term targets) are explicitly mentioned, justified, and presented to the citizens, as well as brought to the attention of the city council for explicit approval, e.g. with the ratification of the next environmental budget.

SENIOR MANAGEMENT	COUNCIL	TECHNICIANS	PUBLIC STAKEHOLDERS
<ul style="list-style-type: none"> ■ Initiation ■ Definition of Co-ordination Board and Co-ordination Team 	<ul style="list-style-type: none"> ■ Information ■ Debate ■ Vote for the adoption of the system (compulsory) 	<ul style="list-style-type: none"> ■ Pre-report on framework conditions ■ Establishment of organisation set-up ■ Preparation of Council decision ■ Information 	<ul style="list-style-type: none"> ■ Information

Table 5. Overview of main Tasks per Actor group in the Inaugural Phase

INAUGURAL PHASE
PREPARATION PHASE
1 ADMINISTRATIVE ORGANISATION

2.3 The preparation phase

The preparation phase forms the foundation of the *ecoBUDGET* cycle. During this intense period, normally taking place in the last months of the year, the actors involved establish both corner stones and implementation plan of the local *ecoBUDGET*. It is crucial to success that all activities are carried thoroughly out and that the *ecoBUDGET* elements are carefully developed and double-checked, in order to avoid mistakes or a lack of precision, which can badly affect the entire process.

The four steps of the preparation phase are; *Step 1: Administrative organisation of the process - Step 2: Preliminary report - Step 3: Preparation of ecoBUDGET pillars - Step 4: Ratification of master budget.*

2.3.1 Step 1 - Administrative Organisation of the Process

The efforts for administrative organisation of the process are to pave the path to an unwavering and successful *ecoBUDGET* implementation. It is to establish the 'who?', 'what?' 'how?' and 'by when?' of the process, to ensure that every contributor understands his/her role and performs the appropriate part at the appropriate time. As a management system constitutes a joint effort by the entire organisation, a suitable organisational set up, strong guiding principles, and clear directives are key to success. However, the efforts in this step are highly influenced by the "age" of respective *ecoBUDGET*, i.e. the duration of application in the local government in question. Once the process has settled into its regular course, i.e. all actors are familiarised with their roles, efforts will mainly concern the process flow and time schedule for the respective year. The organisational set up itself will be evaluated, but will usually remain unchanged.

Revision of Roles and Responsibilities

At the beginning of the cycle, a re-consideration of the organisational set up takes place. This can be motivated either by constriction or as the result of the auditing process (refer to Chapter 2.5.2: Evaluation phase), and can affect both the *ecoBUDGET* co-ordination as well as the contributing actors.

A revision of the Co-ordination Team's composition may be necessary due to personnel changes. These things happen in the administration and will be handled according to usual procedures. A more fundamental revision could take place if, e.g., the internal audit (refer to Step 8, Chapter 2.5.2) suggests modifying the position of the Co-ordination Team within the administration. For instance, the Co-ordination Team may be moved to a more central position instead of being part of the environmental department.

The *ecoBUDGET* Co-ordination Board is particularly active in the **interdepartmental agreement** and the co-ordination of the following activities of the *ecoBUDGET*:

1. Discussion and agreement of predicted environmental consumption needs (estimates), i.e. determining the expected consumption of natural resources by planned measures or changes made to day-to-day operations in the coming environmental budget year.
2. Interdepartmental agreement on the draft environmental master budget.

3. Debate within the local government regarding the proposals and reservations raised by political bodies and the general public in order to reach a consensus about the local administration's position on certain issues.
4. Co-ordination of the ratified environmental budget's implementation, agreement on specific environmental relief measures, and integration of the process into the Local Agenda 21 process.
5. Debate regarding discernible expenditure transgressions (over-budget and non-budget expenses).
6. Agreement on the preparation of the environmental budget balance.
7. Interdepartmental agreement on the environmental budget report.
8. Conclusions drawn from the annual balance, the internal audit and the outcome of council discussions.

As the Board does not necessarily represent the entire local administration, additional departments may need to participate, depending on the agenda and purpose of a given meeting.

Reasons for changes in the Co-ordination Board may be rather simple, e.g. a member of the Board may no longer be employed by the local government, or the respective office's competencies may have changed due to a re-organisation of the administrative activities. Personnel participation in the Board can be easily removed. The decision needs to be taken, whether or not the position should be replaced.

However, it is also possible that the internal audit resulting from the evaluation phase suggests changes to the composition of the Board. This can happen for technical reasons, e.g. modified priorities and changes in resources and indicators selected for the master budget, or political changes (see box: Revision of Co-ordination Board in Bologna). In any case, any substitution of a Board member or any partial or complete revision of the Co-ordination Board has to be authorised by the Mayor or the Chief Executive Officer and officially communicated to the city council, all departments and employees involved with *ecoBUDGET* and further relevant actors, e.g. involved stakeholders. The entities entitled to propose a revision of the Co-ordination Board are the auditor, the Co-ordination Team or the Board itself. This involves a need of transparency and also self-evaluation capacity. However, the decision should lie with the mayor or chief executive officer (or the corresponding authority).

Revision of the *ecoBUDGET* Co-ordination Board - City of Bologna, Italy

*The City of Bologna (Italy) started *ecoBUDGET* in autumn 2001 and an *ecoBUDGET* Co-ordination Board was nominated. During summer 2002 the local government underwent a complete and deep re-organisation of the structure of its administration. Changes took place in the hierarchic levels, subdivision, assignment of competencies, and transfer of personnel. After such a deep change, which took months to be completed, the Co-ordination Board itself realised it had become completely obsolete. Thus, the *ecoBUDGET* Co-ordinator proposed a new composition of the board to the government, which accepted it. One and a half years later, in spring 2004, local elections established a new political majority with a new mayor. It has been announced that again the administrative structure will be radically change (not only because of the appointment of new deputy mayors and managers, but also because of a new division of competencies). Another revision of the Co-ordination Board is expected.*

INAUGURAL PHASE
PREPARATION PHASE
1 ADMINISTRATIVE ORGANISATION

In order to ensure a smooth hand-over and avoid negative affects on the Co-ordination Board's work, it is important that the board's activities are well documented, and roles and responsibilities of Board members clearly assigned.

The revision of the roles and responsibilities of further participants in the process has to be seen as part of the regular process audit and will happen frequently. In a medium sized administration, running *eco*BUDGET based on, say, a 10-indicator master budget, there are dozens of people with specific responsibilities in the process. This makes frequent changes very likely. The *eco*BUDGET co-ordinator needs to be notified of any changes to personnel contributing to the process and consider further action, e.g. the notification of the Co-ordination Board, the introduction of new personnel, or the call for the mayor's decision in cases of conflict.

The development of a process-flow document including a detailed time schedule will be part of the organisational set-up and relates to managerial directives. However, this Step 1 activity needs to be performed completely at the beginning of each *eco*BUDGET cycle in order to transfer general directives into the calendar of the running budget year. Its consideration, and possible revision, after the inaugural phase of introduction is not sufficient (refer to chapter 2.2).

The *eco*BUDGET Co-ordination Team must envisage a detailed schedule of all necessary activities for the up-coming *eco*BUDGET year, from the preparation to the evaluation phase. It is necessary, that all the steps and related sub-steps are mentioned with deadlines and responsibilities.

While setting up the schedule, relevant dates along with local governments management activities (e.g. financial budget, if applicable LA21 calendar or EMAS scheme, further specific plans and programmes, etc.) have to be taken into consideration so as to avoid time-conflicts. Thirdly, the Board shall plan dissemination activities, including celebration and information events for the citizens. The process flow document and the time schedule need to be communicated to all actors involved, agreed on by the Co-ordination Board, and ratified by the Mayor and the CEO.

The Importance of Managerial Directives

In order to guarantee the trouble-free introduction of long-term tasks, responsibilities must be clearly defined according to the prevailing procedures. Within the local administration, it is usual to set out rules such as managerial directives or co-operation agreements in writing. Directives ensure a common basis for unquestioned work progress, help to avoid conflicts and ensure a smooth transfer in case of changes in the administration, external conditions or personnel. This is why the development of managerial directives is key to *eco*BUDGET implementation. They should be signed by the mayor (or equivalent) and put into force to support the process flow within the administration. However, it is wise to first find agreement with the Co-ordination Board, as the rules also concern actors outside the administration.

- Definition of implementation procedures;
- Assignment of roles, responsibilities and contributions;
- Establishment of the communication structure for all actors involved and, in particular, between administrative departments;

- Management of data-flow and document formats;
- Establishment of reporting and documentation;
- Determination of report intervals (frequency, deadlines and formats);
- Establishment of training measures

The directives shall be regarded as operational rules for the administration. They are of particular importance for a smooth and efficient process flow and especially for the co-operation between the Co-ordination Team and further actors, including other departments, political bodies, external entities (like municipally owned companies) and stakeholders.

The box below shows the summary of the managerial directives adopted by the *ecoBUDGET* of Kaiserslautern (Germany).

Summary of managerial directives in Kaiserslautern

Contents

1. Area of application
2. Principles of *ecoBUDGET*
 - 2.1 The conceptual framework
 - 2.2 Procedure of the environmental budgeting cycle
 - 2.3 Function of environmental budgeting in administrative activities
 - 2.4 Area of application
3. Legal framework-conditions
 - 3.1 Binding impact
 - 3.2 Preference of legal requirements
4. Responsibilities
 - 4.1 Responsibilities and tasks of *ecoBUDGET* steering group

SENIOR MANAGEMENT	COUNCIL	TECHNICIANS	PUBLIC STAKEHOLDERS
<ul style="list-style-type: none"> ● Division of tasks and responsibilities ● Managerial Directives 	<ul style="list-style-type: none"> ● Consultation with political parties 	<ul style="list-style-type: none"> ● Establishment of organisational set-up ● Division of tasks and responsibility ● Information 	<ul style="list-style-type: none"> ● Information ● Availability and collection of competencies

Table 6. : Overview of main Tasks per Actor in Step 1: Administrative Organisation of the Process

INAUGURAL PHASE
PREPARATION PHASE
1 ADMINISTRATIVE ORGANISATION
2 PRELIMINARY REPORT

2.3.2 Step 2 - The Preliminary Report

In financial budgeting, the preliminary report that accompanies the budget explains the budget framework, in particular the factors governing changes in income and expenditure development, as well as planned investments and their financial effects over the forthcoming years. This is not only important for informing the council, the general public and regulatory bodies, but also provides an essential foundation for evaluating the local authority's financial efficiency for the forthcoming budget year, for which the budget is available for discussion and ratification.

*eco*BUDGET adopts the function of the preliminary report and slightly extends its use. Information collected for the preliminary reports can be used by the technical departments much earlier than when it is submitted to the council. This will be first at the time when they are asked to predict their resource consumption needs for the forthcoming year. The transparency provided by the preliminary report, of the environmental situation, of emerging legal or political frameworks and of the development of individual environmental areas, allows trends to be deduced that specialists can compare with their own planning schedules, enabling them to produce realistic values for the budget estimates.

The *eco*BUDGET Co-ordination Team asks other departments for information and produces a provisional preliminary report at the beginning of the environmental budget preparation. It serves to provide guidance and support to the participating administration units before being used - together with its own specialist evaluations and calculations of resource demands - as a regular inclusion to the environmental budget, when the latter is presented to the council.

Provisional preliminary report for the drawing-up of the environmental budget

1. Information and instructions regarding procedures for drawing up the environmental budget, substantiation of the business directives by means of deadlines, contacts, technical indications, etc.
2. Explanations and examples of how the predicted resource consumption needs are to be reported.
3. Current values of environmental consumption resp. values of the previous annual balance (previous year's values) within the area of the local authority (e.g. through planned projects).
4. Values and information pertaining to the current environmental budget year (if an intermediate report is available).
5. External trends that influence the locality.
6. The local authority's general future development, using population figures, economic and social parameters, and other relevant statements.
7. Possible other national and international developments that can have a direct effect on the local authority's budget (e.g., the expansion of motorways or technical progress in motor vehicle emissions).
8. Indication of changes in the regulatory framework (e.g., changes in environmental legislation, new standards and regulations or new scientific results).
9. Possible voluntary commitments through, e.g., the local Agenda 21 Forum based on the draft master budget.

The main content of the provisional preliminary report, as intended for the technical departments, is described in an overview in the box above.

The provisional preliminary report provides the departments with information and instructions regarding the procedures to be followed by the administrative units when drawing up the environmental budget. It substantiates the managerial directives that govern deadlines, contacts, and technical indications. It is also advisable to produce explanations and examples of how the predicted resource consumption needs are to be reported.

Dealing with further topics in the preliminary report can be helpful. These include current values (e.g., the expected account balance) that can be predicted for the current budget year, the development expected within the local authority area (e.g., through planned projects) and the external trends that influence the locality.

The values of the preceding annual balance can be taken directly from the previous cycle. The conclusions of the political debates and those considered important by senior management should complement these figures. The latest values for the current environmental budget year can of course only be quoted as partly qualitative estimates. In addition, if quarterly or half-yearly reports have been compiled, the figures and data they contain can be used. Individual measures or events that have a significant influence on the overall future development should also be emphasised.

For future reference, the local authority's general future development should be outlined using population figures, economic and social parameters, and other relevant statements. The statistics office should provide the data required for this. Even more importantly, there should be an indication of any changes in the regulatory framework (e.g. due to changes in environmental legislation, new standards or deadlines stemming from the obligation to implement EU guidelines, or the availability of new scientific results).

The *ecoBUDGET* Co-ordination Team circulates the preliminary report to all relevant departments (environment office, health office, town planning office, agency for economic development, etc.). These departments are asked to: (i) determine their predicted resource consumption (i.e. spending forecasts), (ii) identify planned measures and (iii) predicted events that could influence indicator or budget development. This should, if possible, be quantified.

If voluntary co-operation agreements exist with external actors (local authority services, companies, associations, etc.), they should be provided with a copy of the preliminary report and requested to communicate their estimates.

The forecasts and expectations of different departments can of course contradict each other or become duplicated in certain areas. The *ecoBUDGET* Co-ordination Team must therefore proof-read single aspects, and check that plans are coherent with those included in the financial budget. Many of the planned measures consume (or save) not only natural but also financial resources. The financial funding required to implement these measures must be indicated also in the financial budget. The same applies to the environment-related measures included in the financial budget that are not included in the environmental budget.

Furthermore, in order to avoid costly changes at a later stage, senior management should be involved in the procedure at this stage. As they are the ones who propose the final draft along with the draft resolution to the council, it is extremely important that they give their unreserved approval to the environmental budget.

All information from the departments, the finance office, the senior management and the Agenda 21 Forum, or from individual, external actors, is assessed and summarised by the *ecoBUDGET* Co-ordination Team. Following this, the budget components are revised. The

INAUGURAL PHASE
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budget components are then brought together in a clearly structured, comprehensive document, known as the master budget. The preliminary report has thus created the environmental budget that will be politically scrutinised and, eventually ratified.

SENIOR MANAGEMENT	COUNCIL	TECHNICIANS	PUBLIC STAKEHOLDERS
<ul style="list-style-type: none"> Information on past, present and future policies/activities 	<ul style="list-style-type: none"> Information 	<ul style="list-style-type: none"> Analysis of framework conditions Preparation of the report 	<ul style="list-style-type: none"> Consultation Comments and contribution to the report

Table 7. Overview of main Tasks per Actor in Step 2: Preliminary Report

2.3.3 Step 3 - Preparation of the three *eco*BUDGET pillars

This step is the most crucial in *eco*BUDGET, as it forms the foundation for all following activities. It is concerned with establishing the three pillars of *eco*BUDGET (already outlined in the Chapter 1.2):

1. the master budget
2. the environment-benefit analysis
3. the statement of environmental assets

From a procedural point of view, the most significant difference between the three elements is, that only the master budget presents targets. Consequently, an important difference between the three elements appears, which is now explained.

The statement of the environmental assets and the environment-benefit analysis will be established and maintained in practice as reporting elements. This is to provide the political decision makers with comprehensive and up-to date information regarding the actual state of natural capital and sustainable development linked to the environmental master budget. As part of the environmental budget balance preparation (for Step 7 and 9 refer to Chapter 2.5), the figures for indicators included in these two elements will be presented to the Council. Usually, the structure of the statement of environmental assets and the environment-benefit analysis will remain stable for a number of years. However, the internal audit will have the task to review the elements as to whether or not the indicators used are meaningful and appropriate for the purpose. If not, the Co-ordination Team, together with relevant actors, will modify the indicators or select new ones in agreement with the Co-ordination Board.

The master budget, on the other hand, is *eco*BUDGET crucial overall planning and steering element. As is the case with the financial budget, it must be ratified by the council every year, concluding the preparation phase of the *eco*BUDGET cycle (see Step 4). For this particular purpose, the master budget has to be re-established every year in order to fine-tune the activities toward the long-term targets. It is to define short-term targets for each included indicator, as well as to establish a basis to develop and agree on plans for measures that help to achieve the long-term targets.

The establishment of the master budget is obviously guided by the results of the previous evaluation phase (for Step 7 and 9 refer to Chapter 2.5) and suggestions resulting from internal audits, council debate and stakeholder discussions.

Special attention must be given to deadlines for long-term targets (with, depending on the individual indicator, periods of 5 to 15 years). If a target is achieved, agreement has to be found as to either new long-term targets for the respective indicator or its replacement with a new indicator. This depends on a discussion on priorities. Also, the audit or council debate (refer to Chapter 2.5) may suggest that long-term targets need to be revised (see above). This must find response in the new cycle's master budget.

Table 8 presents an overview on the purposes and differences of the three central *ecoBUDGET* elements

Table 8: Overview on the purposes and differences of the three central ecoBUDGET elements.

		MASTER BUDGET	STATEMENT OF ENVIRONMENTAL ASSETS	ENVIRONMENT BENEFIT ANALYSIS
INITIAL PHASE		Establishment of structure (resources, indicators and long-term target)	Establishment	Establishment
FIRST YEAR	P.Ph:	Establishment and ratification of short-term target	Ratification	Ratification
	E.Ph:	Balance (Report) and ratification	Balance (Report)	Balance (Report)
SECOND YEAR	P.Ph:	Establishment and ratification of short-term target (annual)		
	E.Ph:	Balance (Report) and ratification	Balance (Report)	Balance (Report)
FOLLOWING YEAR	P.Ph:	Establishment and ratification of short-term target (annual) New indicators? New long-term target?	Revision (new indicators?)	Revision (new indicators?)
	E.Ph:	Balance (Report) and ratification	Balance (Report)	Balance (Report)

How to achieve Consent on the Master Budget - from Environmental Issues to ecoBUDGET Targets

As expressed in Chapter 1.1, *ecoBUDGET* is not an indicators system, rather it is a system based on indicators. This is an apparently small but indeed decisive difference. The result is a process to select appropriate indicators for managing natural resources.

Figure 7 synthesises the process from environmental issues to targets for the environmental master budget.

Setting up *ecoBUDGET* does not only involve ensuring creation of organisational prerequisites

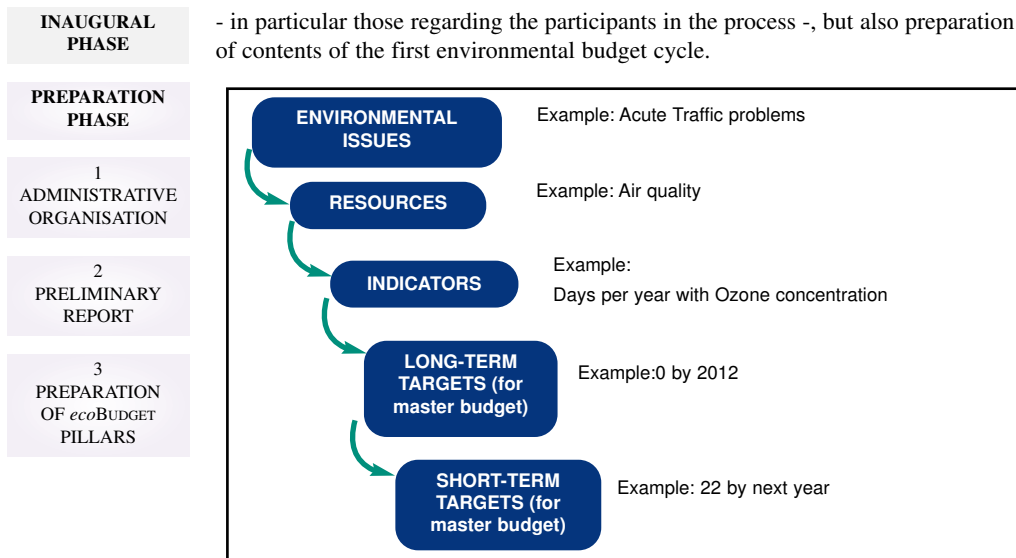


Figure 7: From environmental issues to targets

In practice, it is up to the local government to decide to what extent stakeholders will be involved in the process of establishing the environmental budget. However, experience shows that the process gains greater consensus through transparency. The proven techniques of participatory processes like Local Agenda 21 or citizen fora are suitable for finding agreement on the identification of main problems (i.e., environmental issues) and related resources. This is to establish the logical path towards setting environmental targets: environmental issues - natural resources - indicators - environmental targets. Thus, it is efficient and therefore recommended to perform target setting as a participatory process. The role of technicians will be limited to the selection of appropriate identification and target proposals.

From Environmental Issues to Resources

Initially, it is necessary to find out which resources are of particular importance to the local authority and, therefore, which need to be "administrated" and managed using the environmental budget process.

Natural resources are frequently understood as naturally occurring materials and supplies of raw materials and water. This simple definition, however, does not do justice to the actual scarcity of resources in the environment and nature. For this reason, the term 'resources' is explained in more detail here. The *eco*BUDGET concept defines, natural - or rather, "environmental" - resources as all the entities (common goods), which can be used directly by humankind, but which s/he cannot directly produce. Such an entity could include the supply of a certain material (e.g., the deposit of a raw material such as wood). However, it can also be the state of a system, such as the composition of the Earth's atmosphere, upon which the stability of the global climate depends. Generally spoken, in *eco*BUDGET, environmental resources are, in the widest sense, elements or components of the ecosystems (glob-

al system), that support human life. They include raw materials, climate stability, peace and quiet, air, water, soil/land. Environmental resources can be affected and degraded by human activity.

Theoretically, the number of different natural resources is unlimited. Every combination of entity and human use can be considered as a natural resource. However, not all resources need to be given the same attention by a local authority. In general, the selected natural resources should be those that are particularly important and scarce, e.g. soil for maintaining ecosystem productivity and for generating ground water, or the composition of the Earth's

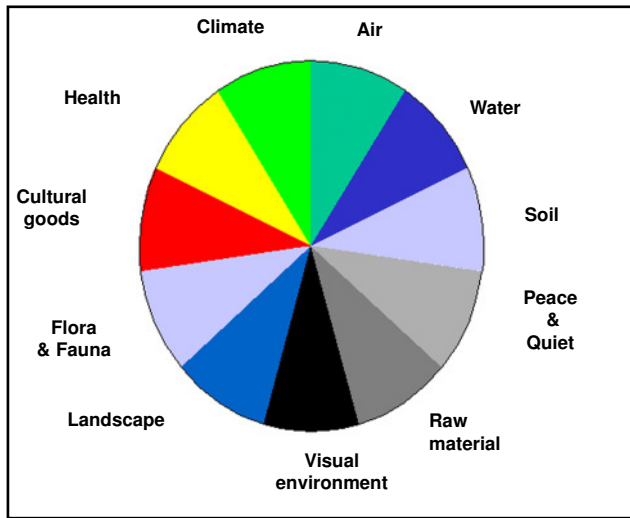


Figure 8: Resources in technical discussions

atmosphere. Because of the complexity inherent in defining resources, recourse to scientific recommendations is advisable. However, the local authority should be the body that discusses and selects the resources most appropriate for their environmental budget.

A recurring topic in technical discussions (particularly regarding local environmental impact assessment) is the choice between different resources (see figure 8)

ENVIRONMENTAL PROBLEM	ENVIRONMENTAL ENTITY THAT IS INFLUENCED	USE OF THE ENVIRONMENTAL ENTITY	NATURAL RESOURCE
Greenhouse effect	Stability of the Earth's atmosphere	Global Climate remains stable and ensures the continuation of conditions for life support	Climate stability
Summer smog	Air Composition	Supply of healthy air to breathe	Air (quality)
Surface sealing	Ecological functions of unsealed surface, local climate and biodiversity	Healthy local climate, relaxation/leisure, protection from flooding, filter of pollutants	(Unsealed) surface
Use of drinking water	Supply of unpolluted groundwater	Adequate supply of clean drinking water	Water (supply)
Traffic Noise	Inner city "quiet zones"	Health, Quality of life	Peace and quiet

Table 9. From environmental issues to natural resources

INAUGURAL PHASE	Table 9 shows examples of how scarce natural resources can be derived from actual environmental issues. The use of these resources for <i>ecoBUDGET</i> can be maintained within set limits by including and managing them in the environmental budget.
PREPARATION PHASE	Combining several resources involving the same medium (air, soil or water) in a generic term for the purposes of the environmental budget (e.g. supply of ground water, quality of ground water and watercourses under the heading "water") can aid those involved with the process to understand the whole picture.
1 ADMINISTRATIVE ORGANISATION	In Chapter 2.3.1, the possible revision of the selected set of indicators has been explained. The revision may lead to the modification, exclusion or addition of indicators. However, modifications to the set of indicators need to be handled with care. In any case, it should be ensured that all relevant resources are represented in the environmental budget.
2 PRELIMINARY REPORT	The way of prioritising environmental issues and, subsequently, selecting the set of resources corresponding to local circumstances depends on a number of factors. The Co-ordination Board may decide to organise a participatory process to identify the issues of environmental priority for the local territory and to select corresponding environmental resources. It may be beneficial to apply investigation methods (interview, surveys, etc.), or to make use of the existence of a LA21 process or a citizen's forum. If other environmental management systems are in place, the selection of resources should be linked up to, e.g., the EMAS significance test.
3 PREPARATION OF <i>ecoBUDGET</i> PILLARS	

Selection of environmental resources from environmental issues - City of Växjö, Sweden

The City of Växjö came to the selection of the resources for its master budget through a participative process. After brainstorming on local environmental issues with the ecoBudget Co-ordination Team, political parties and external stakeholders, the issues were summarised into six resources: clean air, good built environment, climate stability, high environmental awareness, fresh water (lakes, streams and ground water) and biodiversity. Afterwards a working group was established for each resource.

The box above describes a way to derive resources linked to existing processes. Once a set of resources, i.e. the structure for the environmental master budget, has been established, the Co-ordination Board starts the process of indicator selection.

From Environmental Resources to Indicators drawing-up the Master BUDGET

This part of the process is of particular strategic importance, as it influences the decision, which indicators will comprise the master budget, and which the statement of environmental assets. The selection of indicators for the environment-benefit analysis follows a slightly different approach, focusing on human needs rather than environmental resources.

In this paragraph, the focus is on the description of how to derive indicators for the master budget. The establishment of the statement of environmental assets and environment-benefit analysis is explained further on in this chapter.

Once a local authority has decided which natural resources should be given priority, their availability and consumption needs to be expressed using indicators. The physical unit that expresses how it should be calculated or measured defines the indicators. The unit is therefore an integral part of the indicator and should always be specified with it.

A total of between five and fifteen indicators (max. twenty) should be drawn up. This, compared to the traditional environmental reports, rather small amount of indicators depends on the need for transparency and effectiveness. With a concise number of indicators, instead of a too long list, both citizens and politicians (i.e., all non-technicians) will find linking the administration's goals and policies more immediate and clearer .

The following box may serve guideline to answer the question: What makes up a good set of indicators?

1. **Unambiguity:** *An indicator needs to be expressed in such a way that it is clearly recognisable which parameter it monitors and in which unit it is measured.*
2. **Availability of data** (updated with appropriate frequency): *It is crucial to find out whether the selected indicators can also be supported by data, and whether the necessary calculations or surveys can be carried out. This requires a weighing-up of the effort needed to acquire new data against the validity and applicability of already existing data. The utilisation of existing data should, where possible, be given priority. It is important, however, that these data are capable of being updated at least once a year.*
3. **Predictability** (indicator usable for identifying trends): *In order to make estimates for the draft budget, it is helpful if the technical departments are experienced in handling the selected indicators. As long as there are no precise plans for the implementation of measures which are linked to a calculated result, a local administration's technical personnel should be in a position to estimate the development of the indicator for the coming year on the basis of trends or scenarios.*
4. **Comprehensibility** (indicator understandable by non-experts): *Indicators and their corresponding data must be comprehensible and reproducible at any time in order to satisfy requests for information from third parties who were not involved in their selection and definition. Only then can the reliability of the environmental budget be guaranteed, independently of changing responsibilities. Data sheets in which key information on each indicator is set out under headings such as "Definition", "Unit", "Differentiation", "Source of Data", "Update frequency", etc., have proved effective.*
5. **Representativeness:** *Besides the individual indicators, the composition of the complete set of indicators or the indicator system as a whole also needs to be representative. A representative reproduction of a local community's critical natural resources or most urgent environmental problems is aimed for here. These can be global in nature, such as the local community contribution to global climatic change due to carbon dioxide emissions in tonnes per year. But a local authority's environmental budget can only gain an individual character if it represents specific local environmental problems using appropriate indicators.*
6. **Clarity** (Concise set of indicators): *In a discussion on indicator selection, it soon becomes clear how much is not represented. There is a great temptation to include a larger number of indicators instead of consciously "cutting out" part of the real situation. This subsequently leads to an environmental budget that can no longer fulfil its principal functions: those of steering according to priorities and making the relevant information*

As with the resource selection process described above, this part of the process can also easily be conducted as a participatory process. As one possible way to retrieve a set of indica-

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PREPARATION PHASE
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tor, this could take place through, e.g., systematically questioning participants. This can make it easier to evaluate the individual indicators and agree on the whole set as it is to be included in the environmental budget. Table 10 shows an example of this type of questionnaire. For everybody to understand the process, it is important that the Co-ordination Board agrees at an early stage with whom, how and by when the selection process has to be finalised.

The ratification by the city council of the indicators set as structure for the three *eco*BUDGET elements may be beneficial. This involvement of politicians could help developing ownership and an understanding of the budget. Like this, the actual budget debate is more likely to focus on targets rather than on the structure of the master budget. However, it is the Co-ordination Board, in agreement with the senior management, that must make this decision.

The indicator ... (Please mark with a cross and, where necessary, provide a short explanation on the enclosed sheet)	Maximum concentration of nitrates (in mg/l)	Maximum concentration of pesticides (total of all active substances in µg/l)	Maximum concentration of pesticides (individual active substances in µg/l)	VHHC* polluted sites >10 µg/l (number)	Non-remediated polluted ground water sites (number)
... represents the scarce resource					
... involves justifiable compilation costs					
... is related to an appropriate long-term target					
... can be influenced locally					
... really must be introduced					
The following indicator is perhaps more suitable (please enter)					

Table 10. Questionnaire for the selection of indicators

With these final figures, the draft master budget is completed. It is strongly recommended to document all information regarding indicators - selected or not - in a common template.

This may be valuable as justification for third parties' reviews, to avoid duplicating work by discussing the same issues year after year, to provide background informa-

tion on indicators to councillors, stakeholders or technicians, or to assist the familiarisation of new employees. Cities are therefore encouraged to complete indicator sheets for each individual indicator (see Table 11).

INDICATOR	ENERGY EFFICIENCY IN DOMESTIC DWELLINGS IN LEWES DISTRICT COUNCIL
Definition of Indicator	Improvements in insulation. Heating systems and use of solar energy
Resource	Stable Climate
Unit of Measure	% improvement in energy efficiency
Measurement Frequency	Annually
Reference Year Value	1996 - 0%
Short-Term Target	2002 - 11% improvement
Mid-Term Target (year)	2011 - 30% improvement
Desired Trend	2% improvement per year
Reason/Origin for target	Related to Kyoto Protocol Government Legislation - Home Energy Conservation Act 1995 EMS Indicator Best Value Performance Indicator
Type of Data	Insulation, heating and solar energy statistics
Data manipulation needed	Use of the Envirossoft energy database
Source of data	Government Statistics, Energy Advice Centre, Council Schemes
Contact person for data	Steve B. (HECA/LA21 Projects Officer)
Responsible person for indicator	Steve B. (HECA/LA21 Projects Officer)
Departments involved	Environment and Health, Housing Services
Measures (ongoing/ planned) to reach target	New and existing energy efficiency schemes Further bids for government finance A number of ongoing Government led schemes and planned activities for next 5 years to achieve target
Measures Carried out	Energy advice, cavity wall and loft insulation, low energy light bulbs, solar panels, draught-proofing, energy efficient boilers, condensing boilers
External Actors involved	Utility companies, energy saving trust, health authority, national, regional and local government, energy advice centres, installers and householders

Table 11. Example of an Indicator Information Sheet. Lewes District Council, UK

INAUGURAL PHASE
PREPARATION PHASE
1 ADMINISTRATIVE ORGANISATION
2 PRELIMINARY REPORT
3 PREPARATION OF ecoBUDGET PILLARS

This documentation is particularly important in case of personnel change, to allow for easy access to available information. An example for an indicator sheet is presented below.

Finally, as is the case in the selection of environmental resources, it can happen that as a result of the audit (refer to Step 8, Chapter 2.5.2), one or more indicators have to be modified, merged or replaced in the next cycle. This can happen for a number of technical as well as political reasons. Independent of the reasons, it is important that the city council takes note of any modification of the structure of the environmental budget (be it a cancellation, a change or an addition of indicators). To the same token, it is important, that stakeholders and the public are clearly informed.

From Indicators to Long-term Targets (Master Budget)

Long-term targets for the environmental budget set the framework for resource consumption limits within the local authority. This framework determines the environmental quality to be attained in 5 to 10 years' time and prevents the local authority from losing sight of the route to sustainable urban development. Environmental quality is therefore represented as a reduction in resource consumption, a reduction in the emission of resource-stressing materials (so-called reduction targets), or by the compliance to standards. Quantitative targets formulated in scientific standards, or recommendations made by expert committees or set out in international treaties and national programmes, can be referred to for this purpose. However, the local authority can also formulate its own concrete guidelines if it is pursuing more demanding targets for certain resources or developing targets for the specific consumption of natural resources based on long-term planning and development scenarios within a particular area.

Improvement of an indicator - Municipality of Kalithea, Greece

In the master budget 2002, in order to express the resource „climate stability“, the Co-ordination Board decided to include the indicator „Energy consumption per inhabitant“. Because the technicians found that the information needed was not been available, the Board decided to use the indicator „Energy consumption per municipal employee“, assuming this as an approximation of the population behaviour. During the following year the municipality was able to install software allowing the estimation of the energy use of the whole residential and commercial territory. Since 2003, Kalithea is using the originally selected indicator „Energy consumption per inhabitant“ for its environmental master budget.

Long-term targets are defined in comparison to a reference or base year. Thus, the first step is to enter local numerical values for the base year, which can be of course different from indicator to indicator. The base year usually depends on data availability and may be set between 5 and 10 years back. The base year can be chosen according to different reasons. In any case it represents "the beginning of the journey to sustainability" for that particular indicator. For example, it can coincide with the year in which the first activities of a certain policy regarding that indicator have been undertaken, or, for CO₂-related indicators, the base year often coincides with the reference year 1990 of the Kyoto protocol. A city can even let the base year for all the indicators coincide with an important political change in the local authority.

Table 12 shows how long-term targets can be derived. The examples presented are taken from the city of Bologna in its first *ecoBUDGET* cycle. It shows how many different reasons (political at different levels, technical, scientific, etc.) can motivate target selection.

CONSUMPTION INDICATOR AND UNIT OF MEASURE	SOURCE OF TARGET	LONG-TERM TARGET
Concentration of Benzene ($\mu\text{g}/\text{m}^3$)	D lgs 4.8.99 D.M. 2.04.02 Traffic Plan Municipality of Bologna Protocol with the Emilia Romana. Region	40 $\mu\text{g}/\text{m}^3$ (2005)
Energy production from renewable resources (MWh)	Energy Plan of the Municipality of Bologna	200000 MWh (2008)
Noise levels in urban area (San Felice monitoring station) (dBA)	Law 447/95 Acoustic zoning Municipality of Bologna, Urban Traffic Plan Municipality of Bologna	55 (2010)

Table 12. How to establish long-term targets. Excerpt - City of Bologna, Italy

It goes without saying that the motive for the establishment of a target must be clearly mentioned in respective documents.

An important element of discussion (and very often of conflict between technicians and politicians, or politicians and stakeholders) are the questions: how ambitious do we want to be?, and hence: how ambitious do targets have to be? Should one select "comfortable" targets, so that one can celebrate success, or is it better to set more ambitious targets, that can bestow impulse and momentum to sustainable development of the community?

There is no general answer to these questions. Since *ecoBUDGET* is a political framework system for local environmental management, the decision makers have to decide on the "philosophy" of their budget.

Above all, it is a matter of political accountability to find the appropriate balance. The question will appear with every target to be set and will have to be negotiated time after time. It is the Co-ordination Boards' (and eventually of the city council's) responsibility to find the right equilibrium between reliability and ambition for their proposed targets.

As stated already for environmental resources and indicators, long-term targets are also to be regularly evaluated during the audit (refer to Step 8. Chapter 2.5.2), and political debate should follow as to whether they have proven suitable or unmotivated, or if a new environmental situation requires new ambitions targets. The results have to be taken into consideration in the preparation phase, while setting up the new environmental master budget. Of course, the definition of a new long-term target has to be undertaken every time the deadline for a target has been reached or the long-term target has been achieved.

From Long-term to Short-term Targets - completing the draft Master Budget

Choosing the short-term targets is the step that completes the draft master budget and the crucial passage, which constitutes the decisive point of the preparation phase. Before setting the short-term targets for the following budget year, it is necessary to take into account the *pre-*

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vious year's value or reference value to find orientation. Because of the phenomenon of overlapping cycles (see Chapter 2.1.2), this is usually the value of the previous year: if for example a city is, in autumn 2005, preparing the master budget 2006, the most recent reference value will probably be from 2004.

At this point - with base year values, long-term targets and reference years for all selected indicators - the Co-ordination Board can finally agree on proposals for the following budget's operative figures, i.e., the short-term targets.

There are two basic ways for deriving short-term targets. Firstly, the *analytical* way and secondly, the *arithmetical* way.

The *analytical* way, which involves a deep review of ongoing activities (measures, projects, and programmes), reaches an estimate through different departments, the analysis of expected trends, and advice from experts.

Technical departments, local authority services, municipal shareholder companies and associated companies, as well as further stakeholders involved within the local authority's indirect sphere of influence, are asked to identify and report the planned measures and predicted events that could influence indicator or budget development.

MEASURE, EVENT	DEPARTMENT / AGENCY DELIVERING DATA	BUDGET CONCERNED (INDICATOR)	ESTIMATE ARISING FROM QUANTIFICATION OR ASSESSMENT
City-centre traffic calming in connection with the construction of section B of the by-pass	Civil engineering department within the town planning office	CO ₂ emissions ▼ by reducing the stop-and-go operation of motor vehicles	Estimation of the proportional change in traffic-related emissions (-5,000 t)
		▼ Road sections affected by noise in the city centre	Assumption that the guideline value is no longer exceeded over a stretch of 2.5 km.
		New surface-sealing due to the construction of a by-pass	Exact figures relating to surface-sealed surface (1.8 ha) based on the plans
Campaign promoting the installation of water-saving equipment in old buildings	Water association	Consumption of drinking water ▼ by private households	Estimation of the expected potential for savings in the first year (-1 litre per inhabitant and per day)
Start of construction of the West building estates	Planning department	New surface-sealing ▲	Estimation of the new surface-sealing (+3.5 ha) based on the surface area indicated on the building plan
		CO ₂ emissions caused by domestic heating ▲	Estimations using specialist, common key figures (+5,000 t)

Table 13. From planned measures and predicted events to estimates

The effects of the local authority's measures and local events should be expressed in figures (i.e., quantified). However, in many cases, this is not possible. Even if numerical data is not available, it is of utmost importance for the political management process that the effects (or at least trends) of measures are explained qualitatively. The figures required for significant projects can be obtained from reports provided by external experts.

The predicted demand on (increased or reduced) resource consumption that is determined by the participating departments in this way should then be reported to the co-ordination department within the specified deadline. The same applies to reports made by co-operating actors from outside the local administration. Some examples of how measures and events can be reported in a statement of predicted environmental spending are cited in table 13.

After all information regarding the expected impact on the environmental resources in the master budget is analysed, the Co-ordination Board can agree on and present their proposals for short-term targets.

The alternative for deriving short-term targets is the so-called arithmetical way. If the conditions for undertaking the analysis described above are missing, an authority can decide to roughly interpolating short-term targets from corresponding long-term targets. For example: in 2004, city X adopts *ecoBUDGET* and selects as a long-term target for the indicator "daily consumption of potable water" 110 litres/capita by year 2013. The last reference value is 160 litres. The Co-ordination Board agrees to aim at a linear reduction of water consumption by 5 litres each year to attain the long-term target in 2013. Hence, the Co-ordination Board suggests a 2004 short-term target corresponding to 155 litres, 5 litres less than the previous year.

Generally, cities will not opt for either one or the other of the two methods, but for a mixture of both according to information and expertise available. The Co-ordination Board will undertake an analysis of how a target can be attained, but also a sort of tendency towards a "positive trend" is often included. If the Agenda 21 Forum is consulted at an early stage, it is possible to conclude voluntary commitment agreements based on the rough budget draft and then to include them in the budget as estimates. As the interface between leading actors and institutions, the Agenda 21 Forum can be charged with identifying potential contributions from third parties to the implementation of the budget and motivating them to become involved.

Completing the Master Budget

The short-term target described in the previous section is the final operation to set up the master budget. Now, the table is complete. What politicians have on their desks is a short but comprehensive list of lines each of them including the information regarding: resource, indicator, unit of measure, base year value, previous year value, short-term target, long-term target, justification/orientation for the target. Each single line presents an individual indicator and forms a so-called budget component. The sum of the budget components comprises the environmental master budget.

Table 15, on the following page, shows the master budget approved in Bologna, 2003.

The Statement of Environmental Assets

Setting up the basic framework for the further budgetary aspects, the **statement of environmental assets** (and the environment-benefit analysis) is a conceptual task that should be initiated when the first environmental budget is being pre-pared. This ensures that a balanced indicator system is drawn up.

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In environmental budgeting, the statement of environmental assets provides information about the quantifiable local dimension of environmental resources or, in short, the environmental capital within a local authority's area (see Chapter 1.2).

An important feature is that "assets" indicators are normally directly related to the resources identified during the *eco*BUDGET preparation process. From a practical point of view, it is opportune to use the same participatory techniques, as used for the preparation of the master budget, to set up indicators for the statement of environmental assets. Table 14 shows how assets indicators can be generated for natural resources.

NATURAL RESOURCES	"ASSETS" (MAINTENANCE AND GROWTH)	STATE INDICATOR	UNIT
Climate stability	Natural reduction in CO2	Stock of trees / Forest	Number or ha
Air	Human well-being	Less respiratory problems	% of inhabitants not suffering from respiratory conditions
Soil and land	Important areas for the ecosystem balance, the microclimate and recreation	Non surface-sealed area (or free land)	ha or % of total surface

Table 14. How to generate the statement of environmental assets

The Environment-Benefit Analysis

As seen in Chapter 1.2, the environment-benefit analysis is an overview (supported by indicators) of the relationship between environmental consumption and the given level of satisfaction of human needs such as work, living space, consumer activities, mobility, etc. that is achieved as a result of this consumption. As a result, the view that resource consumption is a basic prerequisite for human living and economical behaviour is reinforced. To achieve sustainable local development, the availability, or in other words the efficient use, of scarce goods is crucial.

From an operational point of view, the selection of environment-benefit analysis indicators appears different and more independent from the other two pillars. First of all, a close link to the Local Agenda 21 process is recommended. Secondly, the more open structure of this element (which is not necessarily based on the same resources of the other two) allows for a debate on areas of human needs (according to the 3 aspects of sustainability). However, it is crucial under all circumstances to relate the selection of indicators to the master budget's preparation and allow for the participation of all relevant actors in order to guarantee the consistency of the whole process.

On the local authority level, practical efficiency or performance indicators need to be found. One way of expressing these is as percentage ratios of re-source-consuming activities that are considered to be relatively resource saving or sustainable. In this way, ecologically efficient resource consumption in the area of mobility, for

RESOURCE	INDICATOR	REFERENCE YEAR VALUE	CURRENT VALUE	SHORT TERM TARGET VALUE (2003)	LONG-TERM TARGET	LONG-TERM TARGET SOURCE / JUSTIFICATION
Air Quality	Concentration of particles (PM10)	64 mg/m ³ (2000)	53 mg/m ³	45 mg/m ³	40 mg/m ³ (2005)	D lgs 4.8.99 D.M. 2.04.02 Traffic Plan Municipality of Bologna Protocol with the E.R. Region
	Concentration of Benzene	9.7 mg/m ³ (2000)	10.3 mg/m ³	10.0 mg/m ³	5 mg/m ³ (2010)	
	Concentration of Nitrogen Oxides (NO ₂) -via Stalingrado monitoring station	79 mg/m ³ (2000)	88 mg/m ³		40 mg/m ³ (2010)	
Stable climate	Energy production from renewable resources	71986 MWh (1997)	85074 MWh	90000 MWh	200000 MWh	Energy Plan of the Municipality of Bologna
	Extent of urban district heating	10895 equivalent inhabitants served (1997)	22176 equivalent inhabitants served	25000 equivalent inhabitants served	50000 equivalent inhabitants served	Energy Plan of the Municipality of Bologna
Quiet environment	Noise levels in urban area (San Felice monitoring station)	67,5 dB(A) (1996)	66,8 dB(A)	66, 3 dB(A)	55 dB(A)	L. 447/95 Acoustic zoning Municipality of Bologna, Urban Traffic Plan Municipality of Bologna
Public green areas	Public parks and gardens	6.467.586 m ² (1996)	7.458.352 m ²	7.485.187 m ²		Structure plan of Bologna
Availability of Materials	% of sorting waste	7,8% (1996)	21,85%	28,5%	40%	Ronchi Law Regional Law '99 Delibera31 luglio 2001 PG 1620/2001
Soil quality	Quarries with previously characterised material	0 (2000)	1	3	13	L.R. 17/91 L.R. 443/01 D.M. 411/99

Table 15. 2003 Master budget in the city of Bologna, Italy.

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example, can be recognised (expressed by the so-called "modal split"), if the use of public transport, cycling and walking as means of transport increases in relation to the use of individual motorised transport. The same applies to the percentage of renewable energy sources contributing to total energy consumption.

Another way of expressing efficiency or performance indicators is by using comparative values instead of percentages. When interpreted on the basis that the closest ecological efficiency link is one worth attaining, performance indicators can also be formed using simple relationships between the consumption of resources and the results that are achieved (satisfaction of needs or achieved quality of life). Comparative values need to be used here to judge whether this is the case. Examples include the surface-sealed area per workplace, the living space per inhabitant and residual waste per inhabitant.

Finally, production methods and economic practices should be emphasised, which strive for a minimal consumption of raw materials or a continual improvement in corporate environmental protection. Examples include the management of agricultural land according to the EU bio-regulation guidelines or companies and public institutions that have introduced an environmental management system (EMS).

It becomes clear that almost all human activities are related to the consumption of several natural resources or to various types of environmental damage. The environment-benefit analysis indicators are therefore cross-sectoral.

Examples of the creation of performance indicators are listed in table 16.

NEEDS FOR...	EFFICIENT USE OF THE NATURAL RESOURCE...	PERFORMANCE INDICATOR	UNIT
Mobility	Raw materials, climate stability, air, soil, peace and quiet	Modal split (percentage of walking, cycling, public transport, MIT)	Means of transport per mobility group in %
Gainful employment	Soil	Surface-sealed area per workplace	m ²
Heating and electricity	Raw materials, climate stability, air	Percentage of renewable energy sources in energy consumption	%
Living space	Soil	Living space per inhabitant	m ²
Food	Raw materials, climate stability, air, soil, water	Ecologically-run landscaped area	ha or %
Consumer goods	Raw materials, climate stability, air, soil, water	Residual waste per inhabitant and per year	kg

Table 16. Example of environment-benefit analysis

SENIOR MANAGEMENT	COUNCIL	TECHNICIANS	PUBLIC STAKEHOLDERS
<ul style="list-style-type: none"> ● Agreement to Master Budget ● Presentation of draft to City Council ● Advocacy 	<ul style="list-style-type: none"> ● Information 	<ul style="list-style-type: none"> ● Preparation of the three elements master budget, statement of environmental assets, environment-benefit analysis ● Definition and agreement of issues, resources, indicators and long-term target ● Definition and agreement of short-term targets 	<ul style="list-style-type: none"> ● Participation: Definition of issues and resources ● Contribution to set-up of indicators and targets

Table 17. Overview of main Tasks per Actor in Step 3: Preparation of ecoBUDGET´s Pillars

2.3.4 Step 4 - The Ratification of the Master Budget

Step 4 is concerned with preparing the council's ratification of the master budget.

The first Draft of the Master Budget

Once the **budget components** for all indicators have been formed as described above, they are sent, in the form of a draft of the environmental budget, back to the departments and other participants who were involved with the estimates as part of the preliminary report during the budget preparation procedure. This feedback process enables participants to suggest improvements and comment on the master budget or parts thereof.

Furthermore, it is advantageous to present the draft to the finance office. Cross-checking and agreeing on the environmental budget, in particular the underlying planned measures in relation to the financial budget is important. Firstly, it guarantees the financial insurance of measures intended to improve the environmental situation (including the necessary data collection). Secondly, it helps to expose loopholes if, for example, funding for environmentally relevant projects that are included in the financial budget have not yet been taken into consideration in the environmental budget.

The second Draft of the Master Budget

All feedback from departments, finance office, senior management and stakeholders (e.g. Agenda 21 Forum), or from individual, external actors, has to be evaluated and assessed by the Co-ordination Board. Following this, all single budget components are revised for the last time and the final version of the master budget is nearly ready and presented to the council.

In parallel, the draft should be fully discussed in **public**. The draft document is to be put at the public's disposal. However, it will be better to provide institutions, associations and

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Agenda 21 committees with their own copy of the draft, and to record their respective positions and opinions.

Presentation to the Council

If the senior management have approved the agreed draft, a **draft resolution** is formulated for the council. An explanatory report shall form part of the resolution, which is the basis for evaluating the environmental budget that is to be discussed and ratified. The explanatory report primarily a modification of the preliminary report developed during budget preparation. It comprises all necessary information to understand and analyse the environmental budget. Together with the draft environmental budget - the actual object of decision - the draft resolution is placed on the agenda of one of the forthcoming council meetings and sent to the councillors at least two weeks beforehand. The box gives an overview of a possible structure for the draft resolution.

Example of structure of a draft resolution for council decision.

1. Draft resolution for the council

Draft resolution: Ratification of the environmental budget, commissioning the local administration to: implement the environmental budget; provide mandatory reporting to the council or its specialist committees (e.g. environmental committee, executive committee) throughout the year Reasoning: Reference to other relevant resolutions (e.g. Local Agenda 21 or sustainable urban development concept), explanations of environmental budgeting (if not dealt with in the preliminary report), explanations of other procedures influenced by the environmental budget and financial effects of the implementation of the environmental budget

2. Object of the resolution: Environmental budget - Master budget

Overview of natural resource consumption (on one page, if possible)

3. Enclosure: Explanatory report for the council

Component budgets with explanations:

- Definition of indicators,
- reasoning / derivation of the long-term targets,
- measures and events which influence the master budget,
- development trends (one page for each component budget)
- General information about environmental budgeting
- Regulatory framework at both local and national levels.

Political and public Discussion and Preparation for Decision

The success of ecoBUDGET depends to a great extent on how seriously it is accepted as a tool for political management. **Council discussion, debate, and opinion-forming** in preparation for a decision are therefore central aspects of the procedure. The draft budget, therefore, must not be presented as an over-detailed, comprehensive work - even if collecting information, checking potential sources of error and weighing up priorities between the participating departments and within the Co-

ordination Board and also the actors from outside the administration has generated a lot of work. Existing problems and contradictions should be outlined in the textual explanations (explanatory report). In many cases, the council will refer the draft resolution to the specialist committees (environmental panel, finance committee, executive committee, etc.) for discussion and review.

Ratification of the Environmental Master Budget

Approval of the environmental budget by the council (or its committees) and the general public without discussion or amendments is not always a sign of quality. If changes are required that are too substantial to be marked as amendments on the draft resolution, the environmental budget must undergo a further round of editing and approval.

Once the environmental draft budget is finalised, it is ratified by a **majority council resolution**. As the discussions have already taken place well in advance, the council majority resolution is often a formality at this stage.

To ensure that the budget decision is fully representative, at least four weeks should be allowed after the publication of the council's final decision for public review, before the budget is set into force. The decided master budget should be announced in both the local press and the local authority's official publication (e.g. the official gazette). It should also be sent to interested parties and made available on the internet (where possible). Since, at the start, participants will be new to discussions on environmental budgeting, they will need time to become accustomed to the concept in order to determine and carry out their role.

Ratification of the **environmental budget enfolds as binding** for the local authority, i.e. need to be integrated part of day-to-day business and decision making. In this way, the budget becomes an integral and therefore compulsory aspect of administrative decision-making. From the point of view of co-operative environmental protection, elected representatives are politically bound by the environmental budget. Targets and budgets have to be taken into account in all decision-making and planning processes. As far as actors outside the local government are concerned, the budget is not of binding character. However, the budget obviously can form part of public private partnership agreement. E.g. services or products from those companies could be preferably accepted, which contribute to achievement of targets set out in the master budget. At the end of the environmental budget year they all contributing actors and in particular the **political bodies must account for** the implementation of the targets and budgets stated in the environmental budget - within the city council and vis á vis the general public.

SENIOR MANAGEMENT	COUNCIL	TECHNICIANS	PUBLIC STAKEHOLDERS
<ul style="list-style-type: none"> ● Adoption of Council decision on Master Budget as policy of the local government ● Public information 	<ul style="list-style-type: none"> ● Debate ● Final ratification (compulsory) 		<ul style="list-style-type: none"> ● Evaluation of master budget ● Comments ● Public declarations of stakeholders' positions

Table 18. Overview of main Tasks per Actor in Step 4: Ratification of Environmental Master Budget

INAUGURAL
PHASE

PREPARATION
PHASE

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IMPLEMENTA-
TION
PHASE

5
MEASURES
MANAGEMENT

2.4 The Implementation Phase

When the council ratifies the environmental budget, it also charges the local administration with its implementation. As shown in Chapter 2.2 the implementation phase is an ongoing effort lasting the whole year.

The challenge and importance of the implementation phase is related to the need to implement measures in order to achieve the targets set. In fact, although a number of activities in this phase are linked with existing processes, the *eco*BUDGET implementation phase consists of a series of precise and structured activities, which have to be cyclically repeated.

An important characteristic is that the two steps constituting this phase (*Step 5 - Measure management and Step 6 - Monitoring and accounting*) have not to be seen in rigid chronological order, but rather as a sort of internal cycle, in which, first, the measures are scheduled, then the results are monitored and accounted, and finally, new (corrective) measures are taken accordingly, so that they can be newly monitored and accounted. For reasons of simplicity, the steps are described consecutively and independently.

2.4.1 Step 5 - Measure Management

This part of the process comprises different activities: the decision on a plan of measures to be carried out, the assignment of responsibilities and deadlines, followed by related monitoring and accounting activities, and - based on the monitoring results - the decision on new measures (again combined with corresponding responsibilities and deadlines). Table 19 shows (simplified), the above-explained concept of the flow of activities during a budget year (in this case 2004).

Agree on Measures and assign Responsibilities

In Chapter 2.3.3 we explained how already existing measures can be related to indicators and targets (key word: "estimates").

As the impacts of planned measures and expected events have been estimated as part of the setting-up of the short-term targets during the budget preparation, one could ask why one should now deal with this issue again? Responsibilities and schedules relating to individual measures must be agreed upon within the local administration by this stage at the latest. Also, as experience shows, in practice, it is very difficult to appropriately estimate the impact of measures and events a priori. Moreover, as a result of the target setting exercise, further measures or a revision of already agreed ones, is needed to support the achievement of ratified targets. Therefore, it is recommended to mark the beginning of the implementation phase with a specific activity confirming or re-defining the plan of measures that has been set during the preparation phase.

This exercise is best carried out by those responsible in the individual departments and then confirmed in a high-level round of talks between senior managers (e.g. a meeting between heads of department). The instruction to begin this step is ratified by the Co-ordination Team, which also reaches agreements with participants from outside the local administration - usually in the Co-ordination Board. Self-imposed targets and voluntary commitments must be given a concrete form through the

	MONTH	MAIN ACTIVITY	RELATED ACTIVITY
BUDGET YEAR 2004 - Implementation phase	January	Plan of measures for the implementation year	
	February		
	March	Accounting report 1 st quarter	
	April	Corrective measures?	
	May		
	June	Accounting report 2 nd quarter	
	July	Corrective measures?	
	August		
	September	Accounting report 3 rd quarter	Use of the values for the preparation of the master budget 2005
	October	Corrective measures?	
	November		
	December	Accounting report 4 th quarter	Use of the values for the evaluation phase

Table 19. Flow of activities during the implementation phase

PRIORITY I MEASURES	RESPONSIBILITY FOR IMPLEMENTING THE MEASURE	INDICATOR CONCERNED (BUDGET)	EXPECTED EFFECT	RESPONSIBILITY FOR EVALUATING THE EFFECT	TIME PERIOD FOR REPORTING THE EFFECT
Reduced permissions to entry in the environmental zone (historical centre)	Municipality of Bologna (Mobility department)	Concentration of particles (PM10)	- 3 µg/m3 (estimated)	ARPA (Environmental Protection Regional Agency)	Constantly
		Concentration of Benzene	reduction	ARPA (Environmental Protection Regional Agency)	At the end of the year
		Noise levels in urban area (San Felice monitoring station)	reduction	Environment office:	Constantly
Humid-dry waste collection extension	Municipality of Bologna (Environmental department) SEABO: Waste and Energy service company	% of sorting waste	+4,5 % (estimation)	SEABO	Quarterly

Table 20. Documentation of the plan of measures, responsibilities and due dates - City of Bologna, Italy

INAUGURAL PHASE	announcement of planned measures that are to be implemented in the coming environmental budget year.
PREPARATION PHASE	The announced measures do not have to be completed in chronological order. Instead, a strategic plan should be produced which sets out the priorities for implementation and all relevant information, such as responsibilities, contact partners, obligations for communication and regulation, etc. The results need to be documented properly. Table 20 displays a template for documentation.
1 ADMINISTRATIVE ORGANISATION	
2 PRELIMINARY REPORT	<i>Measures, existing Activities and Events</i> Another logical problem regarding measure-management refers to the simple fact that the local government does not have complete on what happens within its territory.
3 PREPARATION OF <i>eco</i> BUDGET PILLARS	<i>eco</i> BUDGET is an instrument for the whole territory of the municipality, city, district or county. However, there can doubtless be activities or projects - even if planned by the local government itself - whose impacts are in contrast to the targets defined in the master budget. Moreover, since <i>eco</i> BUDGET refers to the entire community and whole territory, the range of unpredictability - expressed generally by the public's response to administration's goals - must be taken into account.
4 RATIFICATION OF MASTER BUDGET	For this reason, it is recommended to analyse possible impacts on resource consumption and use, by means of:
IMPLEMENTATION PHASE	<ol style="list-style-type: none"> 1. measures: decided by the city or other actors for meeting the <i>eco</i>BUDGET targets, normally with a positive impact; 2. existing projects/activities: already agreed plans and projects - often decided before the implementation of <i>eco</i>BUDGET and with environmental impacts; 3. events: mostly unexpected or at least unpredictable occurrences, which can have both positive or negative impacts on <i>eco</i>BUDGET (like a natural event, the response of citizen to a particular project/plan, or a new plan decided on by a different authority).
5 MEASURES MANAGEMENT	
6 MONITORING AND ACCOUNTING	To be able to better interpret all these cases, they must be kept track of and their impacts on the individual environmental resources, i.e. the indicators, represented in the master budget, must be analysed.

Reporting over-budget and unbudgeted Expenditure and, where applicable, ratifying corrective Measures (Supplementary Budgeting)

Deviations from budget values must be recorded systematically during the budget year. **Over-budget expenditure** arises when an existing budget estimate is exceeded. **Unbudgeted expenditure** occurs where no provision for the spending in question is present in the environmental budget, forcing the local administration to retrospectively add a new budget heading.

Sometimes deviations might be so serious that political leaders have to decide on how best to proceed. When this occurs, senior management prepares a bill to inform the council of the unbudgeted expenditure. Using this, the council determines the necessary corrective measures and, if necessary, decides to bring in a supplementary budget or to consider the impacts with the following master budget (i.e.

impacts on related short-term targets). Exceptionally, budget deviation can be brought about by a council decision during the environmental budget year. In order to ensure transparency, the draft resolution should provide information about how the decision in question affects the environmental budget, thereby legitimising further environmental consumption.

SENIOR MANAGEMENT	COUNCIL	TECHNICIANS	PUBLIC STAKEHOLDERS
<ul style="list-style-type: none"> ● Assignment of roles ● Division of tasks and responsibilities ● Decision on measures (especially corrective) 	<ul style="list-style-type: none"> ● Consideration of master budget and targets in decision making ● Decision of measures (on requested) 	<ul style="list-style-type: none"> ● Plan of measures ● Implementation of measures ● Record of implementation ● Education, dissemination and information 	<ul style="list-style-type: none"> ● Contribution to plan of measure ● Implementation of measures ● Report on implementation

Table 21. Overview of main Tasks per Actor in Step 5: Measure Management

2.4.2 Step 6 - Monitoring and Accounting

Once the preparatory stages (i.e., management of data flow and mandatory reporting) have been laid down during the setting-up of *eco*BUDGET (see 2.3.) and then checked once again during the actual environmental budget cycle, the Co-ordination Team can start to record the events that have actually occurred. This comprises activities to monitor the impacts of measures and projects - usually based on appropriate monitoring technologies and then assess the impacts of individual measures or ongoing monitoring related to the targets set out in the environmental budget.

Accounting

At the beginning of the budget year, an account is "opened" for each budget component and its sectoral, spatial, or material subdivisions. This happens with the ratification of the master budget, that establishes accounts for each indicator of the environmental budget. Literally, when planning (preparation phase) is supplanted with the recording of developments (implementation phase) during the budget period, a budget component is converted into an account. After the accounts are established, it is crucial to proceed with the monitoring of impacts and, of course, with keeping track of data. The importance of these two actions must not be underestimated, as only a sound and structured systemisation of these ensure a good basis for the implementation phase's completion.

Up-to-date bookkeeping of the accounts established should show, if possible in real time, whether the budget components of the environmental budget are being adhered to.

Table 22 shows an example of the "benzene" component account of the city of Bologna. Positive, ecological measures taken by the local authority should be recorded in the accounts wherever possible. Measures that lead to a reduction in consumption should be differentiated from those that contribute either to an increase in existing environmental resources or to

		CONCENTRATION OF PARTICLES (PM10) (MICROG/M3)	
		Value 2001	53,0
INAUGURAL PHASE			
PREPARATION PHASE		Short-term target 2003	446,0
1 ADMINISTRATIVE ORGANISATION		Measure No.	Name of the measure
2 PRELIMINARY REPORT			Estimated Contributions
3 PREPARATION OF ecoBUDGET PILLARS		Measure 1	Roads cleaning up,
4 RATIFICATION OF MASTER BUDGET		Measure 2	Reduced permissions to entry in the environmental zone (historical centre)
IMPLEMENTATION PHASE		Measure 3	New public vehicles ATC
5 MEASURES MANAGEMENT		Measure 4	Actions foreseen in the E. R. Region Protocol
6 MONITORING AND ACCOUNTING		Measure 5	Area Mobility management
		Measure 6	Car Pooling (ATC)
		Existing Measure 1	Implementation of Urban Traffic Plan
		Existing Measure 2	Car Sharing (Ministerial Project)
		Event 1	Increase of airport size
		Event 2	Extremely low amount of raining days
		Sum of estimated contributions	
		Comparison 2003 with your measures	
		Needed contributions to reach the target	
		Missing contributions	

Table 22. Example of accounts (Bologna)

the creation of new ones. Reduced motorcar use, for example, should be considered as a reduction in environmental consumption (reduced CO₂ emissions), whereas the generation of oxygen through the replanting of trees should be considered as ecological income. The expenditure framework can be increased by these sources of income.

It is important, however, to recognise a limitation that applies to most of the indicators. Up-to-the-minute accounting for each of the individual activities is not possible within the local authority. In the case of some indicators, just being able to determine approximate levels of environmental consumption at the end of the budget year can be considered to be a large step in the right direction. In these cases, accounting asks for single entries for large projects (based on planned measures). However, the recorded sum of the associated demands placed on the environment will not necessarily correspond to the actual total demands within the locality. This does not, however, reduce the effectiveness of ecoBudget as the decisive trends remain visible.

Due to the phenomenon of overlapping cycles, the accounts, together with the previous year's value (reference value) will have to serve as the basis for the preparation phase of the following cycle. Sound accounting is therefore strongly recommended. The use of appropriate software can serve the aim of obtaining up-to-date information.

Monitoring

In order to manage the accounts in the manner described above, the participating departments must adhere to a mandatory reporting procedure (together with its associated time intervals) that has been agreed upon. In this way, environmental spending and income are reported to the Co-ordination Team. Viewed in this way, accounting acts as a kind of auditing tool for budget monitoring throughout the year.

TEMPLATE: INFORMATION AND DATA - SPECIFICS	
Name / description of information or data	
How is the information used?	
Who owns the information?	<input type="radio"/> ecoBUDGET team <input type="radio"/> Elsewhere in Local Authority <input type="radio"/> External local organisation <input type="radio"/> National or international organisation <input type="radio"/> Other.....
Access rights?	<input type="radio"/> Public domain information <input type="radio"/> Local authority owned <input type="radio"/> Restricted access <input type="radio"/> Charge for access <input type="radio"/> Other.....
Form of information source	<input type="radio"/> Document <input type="radio"/> Database <input type="radio"/> Tabulated file or spreadsheet <input type="radio"/> Verbal <input type="radio"/> Other.....
Format of data used	<input type="radio"/> Numeric <input type="radio"/> Text <input type="radio"/> Graphical <input type="radio"/> Other.....
Transformations needed	<input type="radio"/> Arithmetic <input type="radio"/> Statistical analysis <input type="radio"/> Measurement <input type="radio"/> Interpretation of text <input type="radio"/> Other.....
Relationship to ecoBUDGET	<input type="radio"/> Direct input <input type="radio"/> Component of indicator or target <input type="radio"/> Background information <input type="radio"/> Monitoring information <input type="radio"/> Other.....

It is the Co-ordination Team's responsibility to inform the departments of the current account balance and, where necessary, to point out potential **budget deviations**. In this case - in the spirit of a decentralised responsibility for resources - the departments must look for savings possibilities, or for a change of course, or even consider putting certain projects on hold.

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MONITORING AND ACCOUNTING

Related to each individual indicator, appropriate monitoring technologies need to be applied, to record the impacts of individual measures or ongoing developments. Technological aspects are to be considered already while setting up the indicators during the preparation phase. Descriptions should be included in the indicator sheets (see Chapter 2.3.3). However, the responsibility for the appropriate application of monitoring techniques and the submission of data lies with the department assigned to this activity and has to follow the reporting duties as outlined in the managerial directives. Sometimes, the Co-ordination Team may then need to adjust data to obtain proper information for the accounts. Sometimes, it may be necessary to extrapolate or interpolate, or to analyse reports.

In cases in which quantitative statements on environmental consumption cannot be made, and the implementation of a significant measure is reported merely qualitatively, the responsible department or the Co-ordination Team is should consider further investigation, e.g. through an expert report.

It may be wise to apply a monitoring-record template, in order to keep track of all relevant information regarding the monitoring of an individual indicator. This comprises information regarding the department or actor responsible for monitoring the respective indicator, regarding ownership and access to data, the format of data and the format of submission as, well as comments regarding data manipulation or needed supporting information. The following page presents an example of such a template.

If implementation of a measure that reduces the strain on the environment is delayed, i.e. where a measure is announced in the departmental action plan for a certain date but is not introduced on schedule, the Co-ordination Team has the right to request an explanation.

Finally, budget monitoring also involves the exchange of information with external actors. This includes providing information on the extent to which voluntary commitments have been adhered to or attained through the introduction of measures. Misunderstandings can occur at this point, or actors may no longer be willing to fulfil their voluntary commitments due to short-term economic interests. In this case, the Agenda 21 Forum, in its role as co-implementer of the voluntary targets, can act as a moderator and suggest a solution to the conflict.

SENIOR MANAGEMENT	COUNCIL	TECHNICIANS	PUBLIC STAKEHOLDERS
<ul style="list-style-type: none"> ● Presentation of periodical reports to City Council 	<ul style="list-style-type: none"> ● Reception and analysis of periodical reports 	<ul style="list-style-type: none"> ● Monitoring ● Accounting ● Preparation of periodical reports 	<ul style="list-style-type: none"> ● Monitoring ● Report of monitoring results ● Comments, suggestions

Table 23. Overview of main Tasks per Actor in Step 6: Monitoring and accounting

2.5 The Evaluation Phase

This evaluation phase serves mostly two aims: Firstly, it completes the *eco*BUDGET cycle with a balance and a report on the achievements of the concluded budget year. Secondly, it prepares the ground for management decisions with an internal audit to establish the following budget cycle through the evaluation of both the technical achievements and the process organisation.

This reflects *eco*BUDGET outcome-oriented and forward looking philosophy, and results in the environmental budget balance informing about the achievements of the respective budget year - whether or not the targets have been met - to the city council and the public. The balance provides an easy-to-read report for all interested persons. The three steps forming the evaluation phase are; Step 7 - Preparation of budget balance, Step 8 - Internal audit, Step 9 - Ratification of budget balance.

2.5.1 Step 7 - Preparation of Budget Balance

The environmental budget balance consists of four elements: Three tables present the annual balance, the statement of environmental assets and the environment-benefit analysis. The budget-balance report summarises and explains the result of the budget period.

Ideally, the budget balance of a certain period would inform the budget preparation of the subsequent one. This, unfortunately, is not entirely possible. A major problem occurs while preparing the subsequent master budget, due to the overlapping cycles (see Chapter 2.1.2), which means that final data may not yet be available.

This happens for two reasons: Firstly, the budget period obviously needs to be completed before any data or information can be compiled to take stock of the budget period's achievements. Secondly, time is needed to organise, manipulate, complete and analyse data and information collected from different departments and further actors into one final balance. In many cases, feedback loops need to be established. As the results, not only report on achievements, but also determine decisions for the next cycle, this process needs to be carried out thoroughly and attentively.

However, gaps in the management schedule cannot be accepted and the next cycle needs to be started. Nevertheless, experiences show that it is possible to deal with this problem, since environmental changes - except for disastrous events, which require special disaster management efforts - usually happen over longer periods of time.

To start the next budget preparation, the most recent accounts and the previous year's budget balance need to and can be applied (see Chapter 2.3). The statement of environmental assets and the environment-benefit analysis may already have been prepared during the environmental budget year, in as far as the values available at the time for the indicators included in these documents had already been collected or researched. Data and experiences from the current period's environmental budget balance can thereby influence the following budget preparation, even though the formal environmental budget balance and report may not yet have been finalised and approved.

Balancing the Accounts: Annual Balance

At the end of the environmental budget year, the Co-ordination Team concludes the accounting and draws up the annual balance, i.e., a balance for each indicator included in the environmental budget. The annual balance can be regarded as a core result of the *eco*BUDGET

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cycle. It is presented as a table to be published at various levels in the community. Comparing the balance-sheet values and the budget values does not just allow comparisons between target and performance values, i.e., an appraisal of the past environmental budget year. More importantly, what has been achieved is measured against the long-term target and presented, as a percentage of the latter's attainment.





	on target and/or above (target attainment = 100%)
	in the upper half (target attainment: 50 - 99%)
	in the lower half (target attainment: 0-50%)
	going against the desired direction (negative trend)

Figure 9: Graphical presentation of target attainment.

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In practice, the annual balance presents a table similar to the master budget comprising five new elements for each indicator:

1. The *balance value*
2. A *graphic evaluation* of the period's performance, i.e. against the short- time targets.
This presentation allows politicians and the public to immediately understand, how successful the performance in the respective budget period has been.
3. The *distance-to-target index*. It shows, as a percentage, how far the local authority is on the road to reaching the long-term target, using the respective base year as a reference poin.
It is easily calculated by the formula

$$\text{Distance-to-target index} = \frac{\text{Base value} - \text{Balance value}}{\text{Base value} - \text{Target value}} \times 100\%$$

4. A graphic evaluation of the distance-to-target, i.e. the performance against the long-term target (as shown in the figure 10)
This form of presentation helps the wider public to understand immediately the long-term target's degree of attainment.
5. Comments and considerations presenting reasons for the particular state of an indicator and the respective level of target achievement.

In the next page, an example of an annual balance - here the City of Bologna, Italy, - is presented.

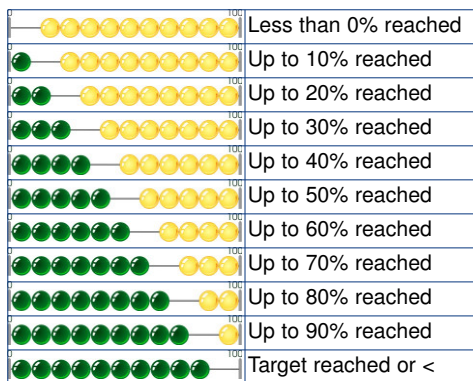













Figure 10: Graphical presentation of distance to target.

Balancing the Statement of Environmental Assets and the Environment-Benefit Analysis

To complete the information presented in the environmental budget balance, the two complementary pillars have to be balanced. As explained above, the statement of environmental assets and environment-benefit analysis have, above all, a reporting function, since for these

#	INDICATOR	UNIT	STOCK 2001	STOCK 2002	STOCK 2003	TREND
Biodiversity						
1	Biodiversity protected area (Natura 2000, Fasouli)	% of the total surface	19%	19%	19%	➡
Soil & land						
2	Outstanding natural beauty areas	no	2	2	2	➡
3	Traditional Architecture villages	no	2	2	3	↗
4	Cultural/archaeological restored Monuments	no	1	1	1	➡
Water						
5	Groundwater level	m from surface	-65	-70	-70	↘
6	Number of beaches with blue flags	no	15	15	16	↗

Table 24. Statement of environmental assets - Municipality of Kalithea, Greece

	Indicators	Reference year value	Value 2001	Value 2003	Short term target (2003)	Long-term target (2005- 2010)	Short-term target evaluation	Comments
AIR QUALITY	Concentration of PM10 (mg/m ³)	64 (2000)	53	45	45	40 (2005)		The concentration of PM10 was affected by extraordinary meteorological events.
	<i>Distance to short target</i>	0%	46%	79%	79%	100%		
	Concentration of benzene (mg/m ³)	9,7 (2000)	10,3	8,4	10,0	5 (2010)		The concentration was principally affected by extraordinary meteorological events (rain). Furthermore, the trend is influenced by natural renewal of motorcycles.
	<i>Distance to short target</i>	0%	-13%	28%	-6%	100%		
	Concentration of nitrogen Oxides (NO ²) - Stalingrado monitoring station (mg/m ³)	79 (2000)	88	94	-	40 (2010)	-	In the last few years monthly fluctuations occurred, but annual concentration is to be considered almost constant.
	<i>Distance to short target</i>	0%	-23%	-38%	-	100%		
STABLE CLIMATE	Energy production from renewable resources (MWh)	71 986 (1997)	81 99	89 83	87 30	188 00 (2010)		The completion of short term measure was delayed (Frullo). Completion attainment of about 80%
	<i>Distance to short target</i>	0%	9%	15%	13%	100%		
	Extent of urban district heating (equivalent inhabitants served)	10 895 (1997)	29 961	32 205	30 800	33 700 (2010)		Some medium term measures (not mentioned in the Master Budget) have already started and their effect is already reflected in the data (Ecocity principally).
	<i>Distance to short target</i>	0%	84%	93%	87%	100%		
	Extent of urban district heating (m3)	540 000 (1997)	950 815	1 171 385	1 400 000	2 221 000		Short term target has delayed at 2004.
	<i>Distance to short target</i>	0%	24%	38%	51%	100%		

	Indicators	Reference year value	Value 2001	Value 2003	Short term target (2003)	Long-term target (2005- 2010)	Short-term target evaluation	Comments
QUIET ENVIRONMENT	Night noise levels in urban area (San Felice monitoring station) dB(A)	67,5 (1996)	66,8	67,4	66,3	55		The increase is caused by a general increase in street traffic. Actions to reach the target have been pursued partially.
	<i>Distance to short target</i>	0%	6%	1%	10%	100%		
PUBLIC GREEN AREAS	Public parks and gardens	6 467 586 (1996)	7 458 352	7 486 952	7 485 187	8 741 000		Large gardens and parks of civic interest have been the main driving force behind this result.
	<i>Distance to short target</i>	0%	44%	45%	45%	100%		
AVAILABILITY OF MATERIAL	% of sorting waste	7,8 (1996)	21,8	24,4	28,5	40		New collection procedures have been adopted by the citizens more slowly than expected.
	<i>Distance to short target</i>	0%	44%	52%	64%	100%		
SOIL QUALITY	Quarries with previously characterised material (number)	0 (2000)	1	3	3	13		In the next environmental budget this indicator will be modified according to the new PAE (Plan for excavation activities).
	<i>Distance to short target</i>	0%	8%	23%	23%	100%		

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elements targets are not required. The most up-to date data have to be collected, treated and compiled according to the process set out in the managerial directives. To the tables shown in 2.3.3, two columns will be added with the balance values and a simple graphic symbol illustrating the positive or negative trend, as shown in tables 24 and 25.

#	INDICATOR	UNIT	2001	2002	2003	TREND
Environment & economy						
1	Hotels with environmental policy (ISO,HAACP,EMAS etc)	amount	3	3	5	
2	Houses/companies using solar energy	%	98%	98%	98%	
3	Organic agriculture lands	% of the total surface	0,10%	0,10%	0,25%	

Table 25. Environment-Benefit Analysis - Municipality of Kalithea, Greece

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The Environmental Budget Report

Data must also be reconciled with the implemented measures and events that have occurred. Analysis by members of the Co-ordination Team and the Co-ordination Board is crucial to determining which measures have been accomplished and how, and which events have occurred and why. The budget balance is therefore accompanied by an environmental budget report, which summarises the analysis of the measures (at least by using key words) and displays the overall results graphically (see below). As a first step, a draft environmental budget report is prepared comprising the results of a performance analysis carried out by the Co-ordination Team in agreement with the Co-ordination Board. This draft version is then subject to an internal audit (refer to Step 8). The results of the internal audit are incorporated into the environmental budget report and submitted to the senior management for presentation to the city council for debate and ratification.

The Co-ordination Team should draw up an environmental budget report for discussion and examination by the council and the public. The main part of the report should provide a brief explanation of the figures and results of the individual elements of the environmental budget balance (annual balance, statement of environmental assets, environment-benefit analysis). A detailed appendix or explanatory section should also be compiled. This should cover the environmental budget year's measures, events, trends, accomplishments and problems. The box below represents a possible structure for the environmental budget report.

The set of figures given in the environmental budget balance, with its three budget elements and qualitative summary, form a fundamental part of the environmental budget report. However, the explanatory section's length and degree of detail can be adapted to the wishes and practices of the local authority.

I Environmental budget balance

- Annual balance
- Statement of environmental assets
- Environment-benefit-ratio

II Summary and outlook ("Report")

Short evaluation of the development of individual resources or indicators as well as the accomplishments and problems encountered when using the environmental management system

III .Explanatory section

Detailed, uniform reports for each indicator

Background information on each indicator

Statements about the environmental situation, the effects on human well-being, sustainable local development, etc.

Definition

Exact description of the indicator and the unit of measurement used

The definition of targets

Explanation of how long-term targets and budget limits are determined

Basis for data

Explanations of the origin, topicality and quality of the data used

Current state and reference values Excerpt from the environmental budget balance (in particular the annual balance) to aid understanding and use of the report, graphic representation

Differentiation

Spatial, sectoral, and/or material differentiation of the annual balance results, where possible or appropriate

Measures

Measures implemented during the past environmental budget year and their effects on the balance-sheet value, planned measures and their expected effects

General opportunities for action in the local authority

The local authority can regulate, advise or promote and become a role model to others. Incentives and proposals for the future can be suggested as a list of opportunities for progress of each indicator.

If, for example, the local authority decides in favour of a detailed report, this can easily reach 100 pages in length. In this case, it is advisable to communicate the results in different ways for the different target audiences. An overly detailed report is often criticised by those who "manage" and therefore use it in their work, i.e., council members, senior management, participating departments. In particular, council members and senior urban managers may need recommendations and alternatives in order to decide on next steps (i.e., "management"). Technical experts within the administration, Agenda 21 Forum representatives and technical and expert groups may be interested in background information and analysis (i.e., "control"). To communicate the results of the environmental budget report to a wide audience, it is best to present the data clearly and concisely using tables (i.e., "information"). This may mean that it is necessary to produce three different versions of the report. In most cases, a detailed environmental budget report replaces a local authority environment report. Thereby, time and finances can be saved. If a local authority limits itself to the core of the environmental budg-

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et report, it must remember to check this against the environmental report and to provide appropriate explanations and cross-references where necessary.

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SENIOR MANAGEMENT	COUNCIL	TECHNICIANS	PUBLIC STAKEHOLDERS
<ul style="list-style-type: none"> • Discussion of budget balance and report 		<ul style="list-style-type: none"> • Preparation of environmental budget balance • Collection of data and information • Preparation of budget balance report • Information of Senior management 	

Table 26. Overview of main Tasks per Actor in Step 7: Budget Balance Preparation Monitoring and accounting

IMPLEMENTATION PHASE

5
MEASURES MANAGEMENT

6
MONITORING AND ACCOUNTING

2.5.2 Step 8 - The Internal Audit

The internal audit serves two purposes: an evaluation of the process organisation and the performance of the recent budget period. The internal auditing process allows the verification of whether or not the procedures applied throughout the cycle proved sound and appropriate to a) perform in the most effective and efficient way, and b) comply with the *eco*BUDGET requirements. The results achieved in this process during the recent budget period are checked against the management background: Have organisational elements hindered better performance? Could modification help?

The Role of the Auditor

The auditing body shall not comprise members of the Co-ordination Team or Co-ordination Board and shall be established with a central function in the administration to ensure a high degree of independence from the process and authority for retrieving all necessary data, information and response. This could be, e.g., the office concerned with quality control. The audit should be performed in close cooperation with the Co-ordination Board and needs to ensure transparency so as to allow for trust and authority.

EVALUATION PHASE

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BUDGET BALANCE PREPARATION

8
INTERNAL AUDIT

Alternatively, or in addition to the internal auditing body, peers, i.e., other cities applying *eco*BUDGET, could undertake an *eco*BUDGET audit. This board will not replace an internal audit, but can offer supervision - a second auditing element for the verification of a local authority's sound work. Recent experiences have been made with this approach with other environmental management systems, and it will be further developed.

The auditor needs to review relevant documents about the appropriate establishment and implementation of the *ecoBUDGET* process, as well as the technical performance towards achievement of the targets set out in the environmental master budget. He/she needs to confirm, that all required elements are being set up and delivered according to the managerial directives. He/she is to assess the performance of the local authority, if everything has been done to the best so as to achieve the targets set.

Auditing in an outcome-oriented System

In order to deliver the audit, the management documentation as well as environmental budget balance and environmental budget report will be reviewed. The auditor will pose questions such as: Could a more appropriate indicator have been selected for a natural resource? In retrospect, must the ratified budget targets be considered unrealistic? Were planned measures sufficiently goal-orientated, only partly implemented or not implemented at all? The audit will also review compliance with respect to responsibilities and deadlines, degree of co-operation between offices and with stakeholders, organisation of measures in comparison with achieved outcomes. Also, in case of a deviation of process and results, an enquiry has to be performed as to whether or not the targets set are to be regarded reasonable.

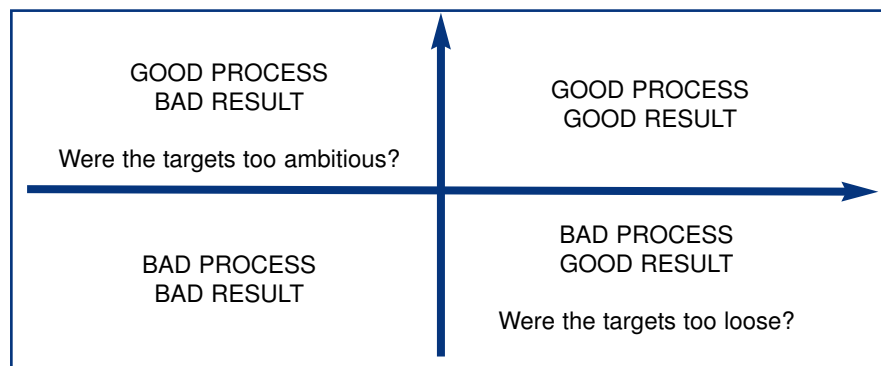


Figure 11: Simplified presentation of an evaluation scheme linking the outcome- and process-oriented assessment with the targets chosen

This combination of process- and outcome-oriented performance evaluation (audit) permits, eventually, to double-check and cross-check, if consistency exists between a 'good job' and 'good results', i.e., if one can speak of 'good performance'. The audit may be performed as a SWOT analysis or with other similar tools. The example below presents a simplified evaluation linking outcome- and process-oriented evaluation with the targets chosen. The results of the internal audit will give important orientation and direction for preparing the new environmental master budget. It will determine both the organisational set up and the technical structure of the master budget, including the selection of indicators as well as both the short- and long-term targets (see 2.3.3.). The audit results will be incorporated into the draft environmental budget report, as the basis for the following council debate.

Publication and Discussion

The **stakeholders involved** shall be informed of the environmental budget balance's results before the final draft is prepared for the council debate, so as to give them an opportunity to comment. For example, the key actors and members of the Agenda 21 Forum could be

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included in the distribution list and provided with a copy of the draft environmental budget report at the local authority's initiative, to retrieve opinions and comments, which should inform the council debate as a 'second view'.

SENIOR MANAGEMENT	COUNCIL	TECHNICIANS	PUBLIC STAKEHOLDERS
<ul style="list-style-type: none"> ● Consultation with auditor ● Delivering of information to the auditor 	<ul style="list-style-type: none"> ● Delivering of information to the auditor 	<ul style="list-style-type: none"> ● Consultation with auditor ● Delivering of information to the auditor 	<ul style="list-style-type: none"> ● Delivering of Information to the auditor

Table 27. Overview of main Tasks per Actor in Step 8: Internal Audit

2.5.3 Step 9 - The Budget Balance Ratification

The concluding step of the *eco*BUDGET cycle is the ratification of the environmental budget balance through the council. The technical characteristics of the budget balance preparation were presented in Step 7. Now, the administrative and public parts of the process are outlined.

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8 INTERNAL AUDIT
9 BUDGET BALANCE RATIFICATION

Presentation to the Council

The revised environmental budget report is agreed between Co-ordination Team, Co-ordination Board and senior management, and then presented to the council for discussion and ratification.

In order to promote its understanding and **critical examination**, it is important that problems that have been encountered and controversial points are not concealed by an overly scientific text. This ensures that the set of figures remains the focus of the discussion. Easily understandable texts and graphics should support this.

Rather than considering the data purely in terms of administrative capacity, political decision-makers will have to become accustomed to examining technical details of the annual balance, for example to explain proactively how inconsistencies between the budget and the balance-sheet have arisen. Management or corrective measures for the coming environmental budget cycles can only be effective if fundamental errors and possible alternatives have already been discussed in detail.

Could a more appropriate indicator have been selected for a natural resource? Or, in retrospect, should the ratified budget values be considered unrealistic because the planned measures were not sufficiently goal-orientated, only partly implemented or not implemented at all? In these cases, the council should ask the local administration to examine alternatives and to take them into consideration when drafting the next environmental budget.

Perhaps the measures were hindered by the actions of other actors within the community or of higher authorities (i.e., regional, federal state, national level)? Here, councillors should develop a strategy for increasing the future involvement of external contributors and alert officials at higher governmental level about the effects of their actions in accordance with the "bottom-up principle". For instance, these offi-

cials could be asked to strengthen the agreement process, and look for alternative forms of management, redirecting resources, policies and measures, to support local government.

Modifying an Indicator. Lewes District Council, UK

Council approved the second Master Budget in April 2004. Some of the indicators were modified from their original representation in the first master budget. The Air Quality Indicators were removed as they were found to be too complex and confusing for Staff, Councillors and Local people. It was hoped that by including new 'District - wide' indicators there will be greater partnership working and involvement of stakeholders. The second Master Budget contains indicators that are high on the political agenda, such as climate change indicators. Originally, with our EMAS system we monitored the energy consumption of our own buildings, and ran a programme to cut consumption (hence emissions of CO₂.) In the second master budget we have tried to expand this area, and look at energy consumption, and CO₂ emissions across the District. This will mean that we will need to strengthen and modify links with Energy providers, renewable energy installation companies, businesses, community groups and organisations addressing energy issues.

Acceptance by the Council and formal Transfer of Accountability

The ratification will usually involve discussions in particular committees. A concluding council debate is to summarise the results of all other discussions and to determine consequences for the next environmental budget. Finally, the city council ratifies the environmental budget balance by vote. This includes the formal transfer of responsibility and accountability from the administration to the city council. Further to that, the administration is commissioned with preparing the next environmental budget cycle.

Publication and Discussion

The **general public** must be informed of the environmental budget balance results as ratified by the city council. The ratified budget balance should be announced in both the local press and the local authority's official publication (e.g. the official gazette). It should also be sent to interested parties and made available on the internet (where possible). To ensure that the budget balance and report is fully representative, at least four weeks should be allowed after the publication of the council's final ratification for public review, before the balance is legitimised to be further used in the budget's preparation.

SENIOR MANAGEMENT	COUNCIL	TECHNICIANS	PUBLIC STAKEHOLDERS
<ul style="list-style-type: none"> ● Presentation of budget balance ● Public information 	<ul style="list-style-type: none"> ● Debate ● Ratification of Budget Balance (compulsory) 		<ul style="list-style-type: none"> ● Evaluation of budget balance ● Comments ● Public declarations on stakeholders' positions

Table 28. Overview of main Tasks per Actor in Step 9: Budget Balance Ratification

Part 3 Yet another Instrument? The integration Potential of *eco*BUDGET

Nowadays, many local authorities state that they have to spend a considerable amount of time and money on environmental planning and management tools. At the same time, the effectiveness of these tools frequently falls short of expectations. This highlights the existence of shortfalls in the available tools, which are often spatially and technically limited, too sector-oriented and inefficient. In addition, they are used independently according to each local authority's wishes: while one town publishes annual environmental reports, another works with environmental quality targets and a third uses voluntary environment impact assessment.

Now that local authorities are, on the whole, categorically rejecting new tools, the question of *eco*BUDGET's **added value** is being raised more than ever. This added value lies in the way *eco*BUDGET systematises working procedures and provides a broad overview, together with its capacities of integration, orientation and its ability to help in the setting of targets.

For example, while environmentally-orientated land use planning pursues a **spatial approach**, *eco*-auditing focuses on a site-based **administrative approach**. In contrast to this, the core of local environmental budgeting lies in the setting of supra-departmental priorities. In light of the existing fragmentation of processes and tools used in environmental management, *eco*BUDGET can act as a lynch-pin holding them all together.

The aim of local environmental budgeting is to draw together the various tools used, for example, in local authority environmental planning (state of the environmental report, environment impact assessment, environmental quality targets, etc.) and to increase their effectiveness, without limiting the choice of methods and tools for the authority.

*eco*BUDGET acts as a primary instrument for reorganising work stages into a uniform and cyclical process. Periodic accounting introduces a time component into local politics and planning, thereby addressing one of the main shortfalls of 'traditional', spatial environmental planning.

Previously isolated steps are now brought together in a **cyclical goal-orientated procedure**. The improved co-ordination of data collection and evaluation that, until now, were required for all instruments will lead to an **increase in efficiency** and **cost savings** in the medium term. The cyclical approach and continual updating of data will increase the **topicality** of information available to the decision-makers, improving the quality of their decisions.

The **formulation of targets** in *eco*BUDGET is an extremely important guideline for each assessment of changes in the environment, as otherwise these would have to be defined within the framework of individual environmental impact assessments. Previously, **monitoring** of the effectiveness of measures, which forms the basis of **environment-benefit analysis**, was non-existent. The introduction of systematic, mandatory reporting, throughout the year as well as at the end of the cycle, promotes the effectiveness of the instruments, thereby improving the efficiency of the financial means applied. The implementation of environmental budgeting therefore results in a **more effective use of the existing tools**.

The central concern of *eco*BUDGET is to reinforce a local authority's responsibility (in the sense of a community-wide responsibility including all economic actors involved in the wider local infrastructure) within a framework of urban development policy geared towards sustainability. Local environmental budgeting brings together many different, and previous-

ecoBUDGET and EMAS

ly independent, methods and procedures and further develops the use of tools in environmental politics and environmental planning.

In addition *ecoBUDGET* links the integration of local authority sustainability reporting with **national sustainable development strategies** which have been elaborated in many countries. The strategies use time-referenced sustainability targets using indicators. Due to the lack of comprehensive targets in social and economic sectors, these strategies have, until now, mainly been applied to ecological aspects. In consequence, new tasks will be assigned to the local authorities once work has been concluded on a national level. Local authorities will have to make a considerable contribution to the implementation of sustainable development strategies and to the attainment of sustainable development targets.

It is likely that the scenario illustrated in *Figure 12*, will develop. Sustainable development plans will be developed at all levels of government. National indicators for environmental sectors, which are influenced by all regional levels, will be compiled. In addition to this, specific indicators will depict each level's current responsibility for environmental consumption.

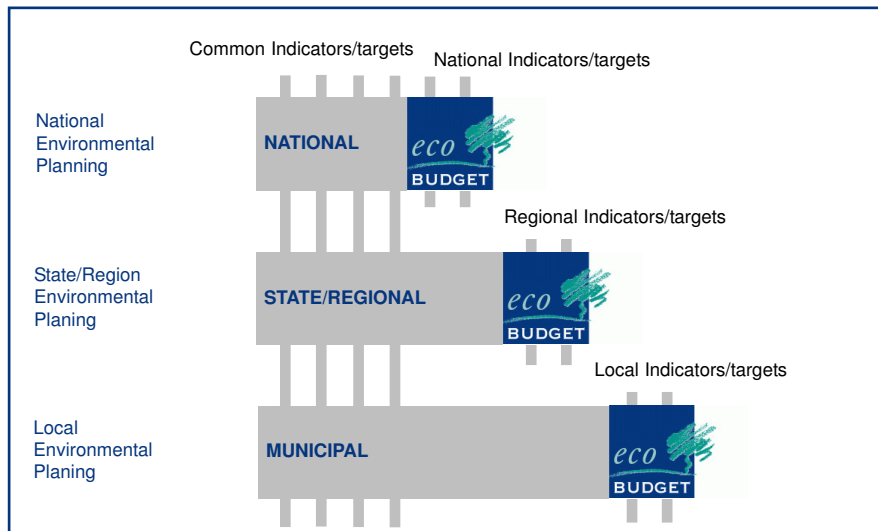


Figure 12: Contribution to a national sustainable development strategy

ecoBUDGET can provide local authorities with the necessary instruments and procedures to enable them to prepare for this task. The vision of a sustainable development strategy does not take the form of a "top-down" approach for each national strategy; instead it will be developed in towns and local authorities, which will have a considerable role to play in the determination of content and targets ("bottom-up approach").

3.1 *ecoBUDGET* and EMAS

This chapter shall provide an impression of the inter-relationship and possible linkages between EMAS/ISO 14001 and *ecoBUDGET*. It presents similarities, complementarities, possible interfaces and added values of *ecoBUDGET* in comparison with EMAS. The outline is based on a thorough analysis of the two approaches, practical experiences from the European

*eco*BUDGET Pilot Project as well as discussions between the European Commission, ICLEI and project partners.

3.1.1 Background: Parallel development

Environmental budgeting, as previously described, has been developing over the last decade, in conscious imitation of conventional/financial budgeting.

At the same time, the European Union's EMAS regulation (EMAS -Eco Management & Audit Scheme) institutionalised an environmental registration system for **trade and industry**. Initially applied to individual sites, it provided an incentive to companies to increase sales by proving that they used environmentally sustainable means of production. Validation and registration also became possible for **local authorities** from early 1998, after EMAS was extended from the production sector to the service industry sector. The potential scope of application was broadened in the joint draft for EMAS II that was approved by the European Parliament on the 14th of February 2001. As a result, all elements in the system can now apply to whole organisations and no longer to individual sites alone.

EMAS is currently the largest and most widely used authority initiated scheme for voluntary environmental management. At present EMAS holds 3642 registrations in the EU, with the most representation in Germany (2364) followed by Austria (300) and Spain (289). However, only approximately 120 of these registered organisations are local authorities (although most of these are only departments or parts of local authorities). The number of EMAS registered organisations remains static. Several initiatives have been developed to combat this situation, such as the incorporation of ISO 14001 as an annex to the EMAS regulation.

Another current EMAS development is the abundance of European projects aiming to find a lighter or simpler version of the standard, sometimes referred to as "EMAS light" initiatives (e.g. the EMAS Peer Review approach). Critics of this approach are claiming that a "EMAS light" would jeopardise and undermine the credibility of the system and further diminish registrations under the "full version" EMAS.

Call for combined use

A group of international experts and practitioners from Finland, Germany, Norway, Spain, UK and Ukraine met at the International Workshop "Environmental management instruments and local agenda 21" in El Prat de Llobregat, Spain to discuss different urban environmental management systems. In their 1999 *Llobregat Conclusions on environmental management instruments and local agenda 21*, they made the following comment on the added value of EMAS and *eco*BUDGET:

*"We have shared practical experiences of local authorities applying EMAS-related environmental management systems and systems of environmental budgeting. We paid special attention to the model *eco*BUDGET. In general we believe that these approaches could and should complement each other. The *eco*BUDGET-approach is a strong instrument for political decision-making; EMAS-based approaches are strong in activating the single units. We recommend that local authorities involved in EMAS-related EMS should complement these activities by introducing an *eco*BUDGET. This will ensure that the full dimension of environmental problems and political priorities will be considered and the influence for and of political decision-makers will be assured."*

EMAS is often criticised for being a bureaucratic and site-specific system with significant costs for audit and verification. local governments have called for "lighter versions" that suit

ecoBUDGET and EMAS

small organisations in particular. While bureaucracy can be a heavy burden for smaller organisations, on the other hand it secures the quality and accuracy of documents and information. Practical use of EMAS has shown a general lack of geographic scope and political involvement. A community-based approach can be problematic, as the environmental targets are generally site or organisation specific. However, EMAS creates an excellent framework for managing, controlling, monitoring and evaluating the organisation's performance. The transparency and credibility of EMAS has always been highlighted as valuable system strengths.

3.1.2 Experiences. Lewes District Council, UK

The environment is a high priority for local people and for the council. Since 1992 Lewes District Council has been striving to go beyond its statutory duties and find new ways to protect and enhance the environment. Initially the emphasis was on recycling and waste minimisation but focus has now expanded to include LA21 and other areas.

In 1994 the council resolved to achieve registration under the Eco Management and Audit Scheme (EMAS.) It was felt that the benefits of an environmental management system (EMS) were numerous. The idea was, by getting their own 'house' in order, the council would be in a better position when encouraging local communities or businesses to protect the environment or comply with environmental laws. By choosing to register the entire Authority under EMAS, cross-departmental co-operation and 'joined up thinking' would be enhanced. The council also felt that EMAS was the best tool for enabling significant improvements in environmental performance and that the annual environmental statement (not required by other management systems at that time) would be an effective means of honest and transparent communication to local people about environmental achievements. Currently within the UK there is a system of government audit and inspection of local authorities entitled 'Comprehensive Performance Assessment' (or CPA). The CPA has highlighted the benefits of environmental management and is acting as a new driver for EMS development in local authorities nation-wide.

The council achieved its goal of EMAS accreditation in 1999 and was proud to be one of only 4 local authorities in the UK to be registered under the scheme. The council re-registered in 2002 and also gained ISO 14001 certification. At present there are only around 14 local authorities in the UK with EMAS accreditation and of these, only 7 are accredited for the whole organisation.

Having an EMAS has ensured that the council is constantly working to minimise the negative environmental impacts of their actions and decisions, and finding ways to strengthen their positive environmental impacts. However, since the outset of the council's environmental work it has been clear that there are limitations to what EMAS can achieve, and drawbacks to the approach. Meeting the requirements of the regulation is time consuming and bureaucratic and the audit and certification process is sometimes seen as the justification rather than a means to an end. EMAS was originally developed for industrial use and therefore is not designed with a political dimension, so member involvement is minimal. There is also less scope for involving local stakeholders.

Lewes District Council felt that implementation of *ecoBUDGET* would enable them to find ways to overcome the shortcomings experienced with EMAS. The beauty of *ecoBUDGET*, according to the council's opinion, lies in its resource-based approach. This means that it can look at District-wide issues that matter to local communities. There is also a political element to the methodology as cabinet approves the environmental budgets. Hence there is much more scope for political involvement in the process than with the EMS so far used by Lewes

District council. The council felt that *ecoBUDGET* would enable them to integrate work carried out in a number of areas under the sustainability agenda. Politically Lewes District Council is also keen to be seen as at the forefront of environmental improvement and they wish to lead by example. Applying innovative instruments such as *ecoBUDGET*, the council believe they can demonstrate their commitment and approach.

Political Process:

The Political structure of Lewes District Council is as follows: the Cabinet is comprised of nine Members, reflecting the political makeup of the full council (41 members). Four Scrutiny Review Boards, comprising of nine members of the council, meet to consider specific aspects of the council's work (Environment Review Board, Housing Review Board, etc.). Environmental management and sustainability are within the remit of the Environment Review Board who consider specific proposals (such as the *ecoBUDGET* master budget, environmental policy) and make recommendations for the council's decisions through the Lead Member for the Environment. The Environment Review board has played a key role in the implementation of the *ecoBUDGET* pilot project - considering indicators, targets and actions and monitoring progress.

Organisational Structure:

Once the council had agreed to implement an *ecoBUDGET* Co-ordination Team was set up, called Local Project Team (LPT) , comprising of a small number of Officers with direct responsibility for the project - the Project Co-ordinator, the Head of Department and the Head of Administration. The council decided that for the trial project a mixture of existing and new indicators would be used in the master budget in order to enable comparisons between both systems. It was decided that the System already in place for the delivery of EMAS could be used and adapted where necessary to perform *ecoBUDGET*.

This structure was used with the addition of the *ecoBUDGET* Co-ordination Team and an *ecoBUDGET* Co-ordination Board, called Local Implementation team (LIT). The LIT comprised of members of the Environment Steering Group (See above - a network of officers delivering EMAS) plus additional officers with responsibility for specific Indicators as set out in the master budget. The LIT is responsible for the implementation of the actions and data collection and monitoring.

The corporate management team (Senior Management and the Chief Executive) are given regular progress reports from the environment officer (*ecoBUDGET* Co-ordinator).

Benefits of each system:

Lewes District Council perceive that both systems have different strengths and often these are mutually exclusive - for example one of the strengths of *ecoBUDGET* is its flexibility. However one of the strengths of EMAS is its rigour. Strong political involvement in *ecoBUDGET* has clear benefits, however there is the possibility of a populist approach to environmental protection, where only the issues high on the political agenda are pursued.

Despite the differences between systems integration is both possible and beneficial. The council is currently using an integrated system, where *ecoBUDGET* extends the existing EMAS system making it more accessible to politicians and stakeholders and able to approach community - based on environmental issues. They are now striving to use *ecoBUDGET* to link their LA21 and community planning work (broader work on sustainability.)

Complementary elements: ecoBUDGET and EMAS

Council approved the second master budget in April 2004. Some of the indicators were modified from their original representation in the first master budget. The Air Quality Indicators were removed as they were found to be too complex and confusing for Staff, Councillors and Local people. It was hoped that by including new 'District - wide' indicators there will be greater partnership working and involvement of stakeholders. The second master budget contains indicators that are high on the political agenda, such as climate change indicators. Originally, with their EMAS system the Council monitored the energy consumption of their own buildings, and ran a programme to cut consumption (hence emissions of CO₂). In the second master budget they have tried to expand this area, and look at energy consumption, and CO₂ emissions across the District. This will mean that they will need to strengthen and modify links with Energy providers, renewable energy installation companies, businesses, community groups and organisations addressing energy issues.

In summary, Lewes District Council would like to continue developing an integrated 'ecoMAS' system. They feel that the EMAS and ISO 14001 certification are an invaluable asset to their organisation in terms of both delivering real environmental improvements and giving the Council recognition and prestige (CPA, work with businesses etc.). In addition, the flexibility, political 'buy in' and potential for increased stakeholder involvement and partnership working offered by *ecoBUDGET* offer them significant benefits and they believe that there is further scope for them to use *ecoBUDGET* to unite various sustainability functions undertaken by the Council in different departments and move from environmental management to 'Sustainability Management' - Looking at the broader sustainability agenda.

3.1.3 Complementary elements: ecoBUDGET and EMAS

ecoBUDGET has similarities with other EMS standards in that they all involve gathering of information, target setting, monitoring and feedback stages. To date, the EMS standards applied in local authorities have been used mainly to reduce the environmental impacts of internal administrative activities and those of local authority controlled activities in the wider community. With its political approach *ecoBUDGET* provides the necessary framework for extensive management of natural resources and reduction of environmental impacts in the whole municipality. This main difference stems from the fact that EMS standards were developed for use by businesses and therefore does not have the built-in consideration for local politics and local administration procedures. An overview is provided in table 13.

Used alongside an existing EMS standard, *ecoBUDGET* can be regarded as the **political** system showing **what** needs to be done while an EMAS or ISO14001 system provides a more detailed plan of **how** this will be done. Using the budget and time-related targets of *ecoBUDGET*, local authorities can define an environmental policy and produce environmental Objectives and Programmes showing in detail, what measures are to be implemented, and what action will be undertaken if targets are not being met. The detailed requirements set out in ISO14001 or EMAS provide the auditing and monitoring structure to evaluate whether the system is satisfactory. At the final environmental budget balance and reporting stage all results can be combined and used for the next cycles.

Both EMAS and *ecoBUDGET* use the cyclical elements of environmental management. The essential difference between them lies in their respective outlooks. In practice EMAS is primarily geared to a local authority's **internal procedures** and directed at minimising the ecological effects of their activities. Whereas *ecoBUDGET* is drawn up primarily to set **comprehensive political targets and priorities** to maintain or improve environmental resources, for the sustainable development of a local authority's entire area of jurisdiction.

EMAS/ISO14001	ecoBUDGET
EMS is used to deal with environmental aspects mainly within the administration (the Local Authority applying the EMS as if it were a business) and some that it can control in the wider community	Political Approach - Local Authority acts in initiating environmentally responsible behaviour in the whole municipality as well as in internal administrative procedures
Objective of continuous improvement	Objective of sustainability
Implemented by co-ordinators with compliance and collaboration of the rest of Local Authority staff, and public involvement	Political targets mean a source of orientation for staff across sectors and for the public
Verification/registration by third parties (external audit)	Approval, controlling, and steering by the city council (internal audit)
Apply time-related targets (e.g. triennial targets in EMAS)	Applies time-related short-term and mid-term targets, annual cycle
Environmental guidelines are formulated at the highest management levels. Political bodies informed.	Priorities and targets (Environmental master budget) ratified by political body (Council)
Make use of market and image	Makes use of political legitimacy
Document control	Political commitment
Strong EMS under defined boundaries	Geographical and community-based scope
Financial implications (benefits)	Links to/Integration with financial budget
Rigid structure	Flexibility & adaptability
Strict system requirements	Few system requirements
Staff involvement	Political, administrative, community involvement
Environmental problems	Resources and assets
Significance test	Priority setting
Legal compliance	Target compliance
Primarily geared to a local authority's internal procedures	Aimed at local authority's entire area of jurisdiction

Table 29. ecoBUDGET in contrast to EMAS/ISO14001

Complementary elements: ecoBUDGET and EMAS

Depending on particular requirements, EMAS may point beyond the local authority's narrow area of responsibility. Up to now, it has primarily been performed as an "internal audit" in which the units of the local authority (departments) and municipal service providers are treated as "companies" whose "sites" are inspected and audited. This approach has arisen from the methodological development of corporate environmental management systems.

The central aim of the European EMAS Directive is to ensure that existing guidelines are complied with to produce **continual improvement** in an organisation's environmental performance, i.e. reduced environmental impact and improved environmental quality. Within this framework, it is the organisation's responsibility to define its overall targets clearly. Auditors check whether these targets - and thus the desired environmental performance - have been attained. One of the advantages of the EMAS regulation is that it sets down guidelines for the structure, function and organisation of the management system. This is intended to ensure that responsible persons are closely involved, and guarantees that decisions really address existing problems and their possible solutions. Used in and taking consideration of local authority structures the local authority's decisions about target setting would have to be taken through the political body.

However, currently the scheme does not incorporate guidelines for the involvement of Councillors in objective and target setting. In fact, this is usually carried out by administrative committees and related departments. The decision-making political committees are merely informed. If, however, political decision-makers are excluded, the chances of implementing successful local environmental management are greatly reduced. It is logical to say that if political decision-makers are not involved in the determination of targets relating to the consumption of natural resources, the specified ecological targets are not continually taken into account in the political decision-making process. In addition, community involvement in achieving the environmental targets within the framework of an agenda 21 process is undefined. There is no real **political management**, even though this is indispensable for co-ordination with the local agenda 21 process. This is where local environmental budgeting comes into play. It contributes innovative techniques for anchoring decisions relevant to the environment at the political level of local authorities. Overall, the EMAS and *ecoBUDGET* systems complement each other (see table 31).

EMAS/ISO14001	<i>ecoBUDGET</i>
Environmental review	Resource identification
Significance test	Priority setting and Indicator identification
Environmental policy, goals	Master budget
Program	Measures
Management commitment	Political ratification
Monitoring, control	Accounting
Management review	Environmental Budget Balance (Report)
Environmental report	Annual accounts, Statement of Env. Assets, Env. Benefit analysis

Table 30. Similarities - corresponding elements of *ecoBUDGET* and EMAS

3.1.4 Complementary interaction between EMAS and ecoBUDGET

This leads to a **complementary interaction** between *ecoBUDGET* and EMAS at the local authority level (see figure 13). The foundations of environmental action within an entire local authority should be **guidelines** that are worked out in an agenda 21 process and ratified by the council. These guidelines can then be used to set quantified, time-referenced and politically binding, ratified **targets** (master budget) that are geared to the ecological sustainability of the entire local authority, including local administration, businesses and private households. This process provides local environmental budgeting with a clear direction and aim. The environmental policy and environmental targets (in accordance with EMAS) for each of the local administration's individual departments or municipal companies are derived from the master budget. The environmental programme is geared towards the attainment of the targets indicated in the environmental budget and monitored using auditing techniques. The results are entered into the *ecoBUDGET* **accounting process** and subsequently become part of the **environmental budget balance**. The sections concerning the **environmental performance** of the local administration and municipal service providers are added to the **environmental budget report**. The environmental budget report can then be used as the basis for the **validation** stage of EMAS.

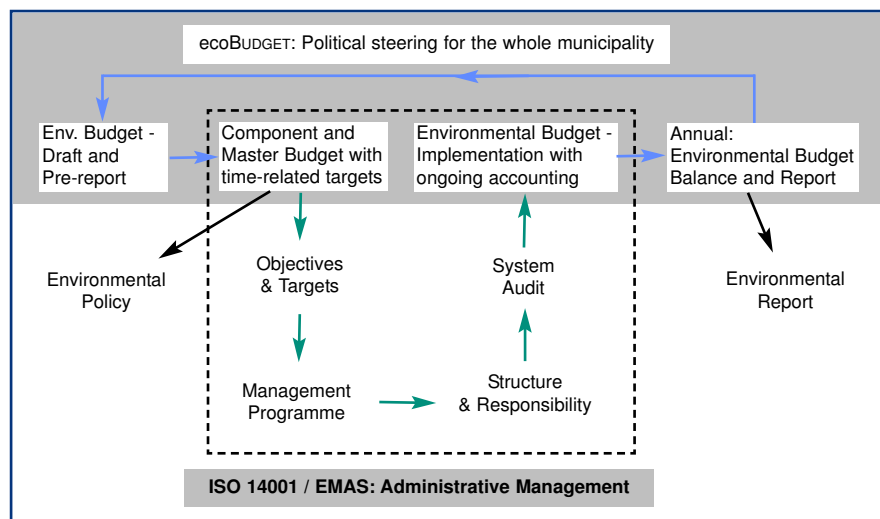


Figure 13: Interaction of *ecoBUDGET* and EMAS

In this way, a local authority's environmental action is integrated into the processes of both local agenda 21 and administrative functions. The indicators from the master budget give 'political' environmental targets for the services and products provided by administrative units or different Departments. This means that each administrative unit or department will implement measures to support the targets indicated in the environmental or master budget. *ecoBUDGET* entrenches a local authority's environmental action at the political level, showing what is being done and where efforts need to be concentrated. With EMAS, the local administration and municipal service providers have a mechanism to aid them in determining how to achieve implementation and target attainment. In this way, a powerful combination of environmental management systems can be introduced to increase the efficiency of local authority environmental policy.

3.2 ecoBUDGET in the Local Agenda 21 process

It has been mentioned several times in earlier chapter, that *ecoBUDGET* strives to include the community and stakeholders in local environmental and sustainability initiatives. This involvement often refers to local agenda 21 forums and processes. This chapter is dedicated to a deeper analysis and evaluation of the relation and integration of *ecoBUDGET* with the local agenda 21 process. Some practical case studies will also be presented together with a brief look into future possibilities and barriers.

3.2.1 Background

It stands rather clear that Europe-wide local agenda 21 implementation is becoming saturated and in many cases declining. It has become increasingly difficult to find maintained momentum past the initial implementation. Agenda 21 is a vital process towards sustainable development, particularly in engaging, motivating and involving stakeholders. However, the local agenda 21 process is in threat of becoming a fad, a process that raises, gains momentum and then, after a while, loses this momentum and declines. *ecoBUDGET* provides new input into this process and can thus sustain a longer (indefinite) peak time, as represented in figure 14.

Local authorities and regions that are in the process of introducing a Local (or regional) agenda 21 (LA21) are faced with a long-term, complex programme orientated towards the future. Local agenda 21 schemes should set out environmental, economic and social goals for achieving sustainability in a local authority. Such an ambitious undertaking of a local authority must be appropriately structured and, above all, be capable of being monitored throughout its development.

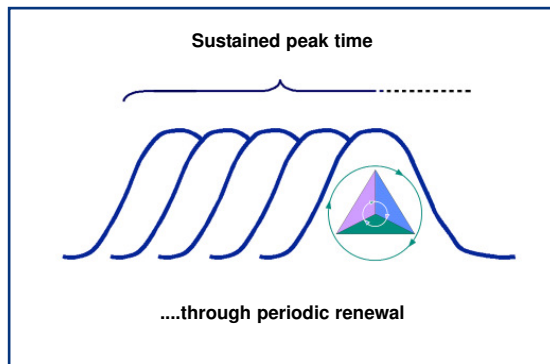


Figure 14:
Unwavering implementation of
local sustainable development,
with the integration of
ecoBUDGET.

The local authority's action plan - the written documentation for a local agenda 21 - should not only set out a coherent approach for future development, a priority list of targets and a catalogue of actions and measures, but ideally contain quantified statements about desired outcomes and time scales. Currently, much time is being spent discussing so-called sustainability indicators, which enable the quantifiable attainment of sustainable development related goals to be monitored. It seems logical that *ecoBUDGET* can move this discussion into action, by becoming a tool for the preparation, implementation, monitoring and management of the environmental components of local agenda 21. The relationship between local agenda 21 and *ecoBUDGET* is built on three foundations:

1. Sustainable development - the overall goal of agenda 21 processes - can be made measurable and comprehensible through *eco*BUDGET.
2. The working processes of *eco*BUDGET and local agenda 21 compliment each other.
3. Because of its orientation towards the use of natural resources, *eco*BUDGET offers a solution for sustainable development, thereby providing a framework for local agenda 21.

Once the local authority local agenda 21 action plan comes into existence local authorities are no longer faced with the question "Where do we start?", but rather "How do we implement this?". Implementation, monitoring and management are significantly supported by *eco*BUDGET, with its capacities described earlier, and the fact that it deals with aspects, areas and measures as a whole, which would otherwise be unconnected and separate.

*eco*BUDGET can thereby convert local agenda 21 from a "one-off" project into a reoccurring planning and implementation routine, thereby securing its institutionalisation as an ongoing process.

3.2.2 Experiences. Lewes District Council, UK

Lewes District Council in Southern England has implemented *eco*BUDGET during the last three years. Lewes already had a well established environmental management system in place - achieving registration under the Eco Management and Audit Scheme (EMAS) in 1998, and certification for ISO14001 in 2002. Furthermore, Lewes' local agenda 21 process has been in operation for almost 10 years. The 2000 Local Government Act changed the national and local political climate in the UK by requiring local authorities to adopt duties for the promotion of social, economic and environmental wellbeing in their area and contributing to the achievement of sustainable development in the United Kingdom.

The Act requires local authorities to develop a 'Community Strategy' that sets out how this will be achieved. This has meant that sustainable development is seen as a key objective for Lewes, whilst maintaining a sound financial basis and delivering good quality public services. Lewes has therefore created a strategy to integrate local agenda 21 and *eco*BUDGET.

The approach behind Lewes' local agenda 21 process is founded on the principles agreed at the Rio Earth Summit in 1992. Sustainable development, is at the heart of the process. Lewes District Council has hitherto adopted a 'bottom' up approach to counter the pervasive top down approach found throughout civic society. This approach has two aims in addition to 'Sustainable Development'

- (i) Empowerment, which means that the district council and administration will:
 - listen to community and stakeholders
 - value the views of community and stakeholders in equal measure to the views of the authorities
 - give the public and stakeholders the opportunity and support to shape their own community and future
 - give the public and stakeholders the opportunity to work alongside the authorities as equals in decision making and local development
- (ii) Consensus, which means that the district council and administration will encourage:
 - avoidance of conflict within a community
 - openness in decision making through various means of consultation

ecoBUDGET in the Local Agenda 21 process

Experiences: ecoBUDGET and Local Agenda 21, City of Växjö, Sweden

ecoBUDGET in Växjö has a clear linkage to Agenda 21. Focus areas and local targets to follow-up were developed in the LA21-process and an Agenda 21-strategy was appointed in 1999. This is to be updated 2005. The ecoBUDGET indicators were chosen on the basis of the goals in the Agenda 21-strategy. Experience and necessities (such as clear targets) from ecoBUDGET will feed in to the work to update the Agenda 21-strategy to a new document for local environmental targets, which is possible to steer and follow up with ecoBUDGET. ecoBUDGET is used to continuously split the long-targets to annual work and to keep track of the process. The participation strategy of LA 21 is at the same time the participation strategy for the local ecoBUDGET.

It is necessary to create a form of micro-local plan (neighbourhood plan), the Town and Parish Action Plans, a **vision of how the local community would like their town or village to be**. For many communities, this is also the foundation for other initiatives, applications or local actions. The ultimate aim of the Parish and Town Action Plan is that it should be reflected in the policies of the local authority's local development plan and identify how they can be put into practice in the community. The plan includes an Action Plan to address local needs at a micro level. It should be contribute to:

- local development plans
- community strategies developed by Local Strategic Partnerships
- Market Town Health checks
- applications for grant aid

The Countryside Agency has produced and disseminated a **Parish Plans guidance and resource pack** for Parish Councils, guidance for local planning authorities and information on how to produce a Village Design Statement that can form part of a Parish Plan.

Based on the Parish Plans, the proposed links between local agenda 21 and *ecoBUDGET* become twofold. Firstly to move towards incorporating social and economic issues into the budget cycle through their impact on the environment and to introduce a 'bottom up' process to *ecoBUDGET* that reflects the issues that impact on everyone. This is a development that makes perfect sense since *ecoBUDGET* is a holistic approach that has the potential to incorporate the principles of sustainable development

The input begins with neighbourhood work in the community, which manifests itself in various projects, most notably town and parish action plans. The consultation process of action plans produce two things, the main issues affecting the life of the inhabitants of a parish and, based on these issues, neighbourhood indicators or measures of wellbeing within the community.

The main issues will be reflected in the master budget indicators, and the neighbourhood indicators will enter the *ecoBUDGET* process through the Statement of environmental assets.

3.2.3 Further development of ecoBUDGET and LA21 interaction

Combining local agenda 21 with *ecoBUDGET* is advantageous for both processes and is an important step towards achieving an integrated approach to local authority management of sustainable development:

- Because of the target-orientated character of the indicators in the environmental master budget (budget limits for the use of natural resources in conjunction with time-related

environmental targets) and the overlap between the two processes, *ecoBUDGET* can provide valid assistance to the preparation, implementation and monitoring of local agenda 21.

- The consensus-building phase of agenda 21 can assist the attainment of targets in the environmental budget through wider community participation in implementation.
- (Environmental) goals of the local agenda 21 (reflected in the environmental budget targets) benefit from their compulsory nature, obtained through the political ratification of the *ecoBUDGET* process on an annual basis.
- Characteristics of *ecoBUDGET*, such as time referencing, budget limits, mechanisms for monitoring success and above all its cyclic approach, have a positive impact on the implementation of the local authority action plan and turn local agenda 21 into a continual planning and implementation process.

As we have seen from the implemented processes, be it in Kaiserslautern, Lewes or Ferrara, the integration of the two processes adds value to local sustainable development.

When one looks at the underlying processes of local agenda 21 and *ecoBUDGET*, the possibilities of linking the two systems become clear. The components of the local agenda 21 process for the elaboration and implementation of a local authority action plan are as follows:

Figure 15 highlights the systematic overlap of the stages of *ecoBUDGET* and local agenda 21 processes. The main consideration here is that the basis of any sustainability lies in the mon-

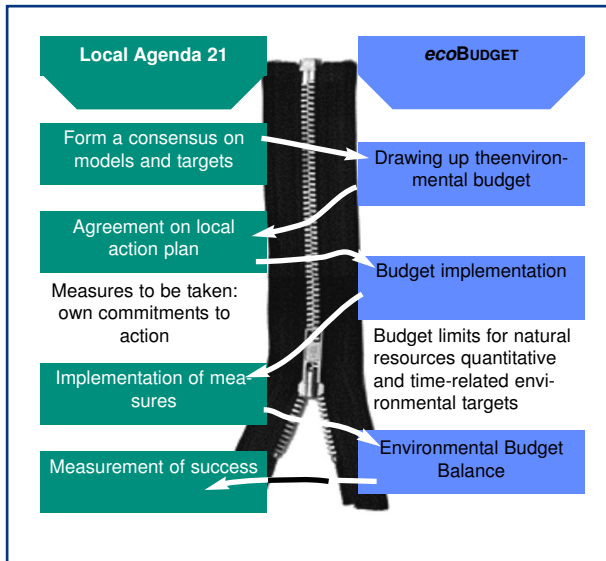


Figure 15:
Links between ecoBUDGET and the Local Agenda 21 process

itoring of limits set for the use of natural resources. The environmental budget represents this by using long-term environmental targets, which are based on the local administration's preliminary report describing the current environmental situation and a consultation with all relevant actors.

Wide public participation in the local agenda 21 process results in the co-ordinated development of a model for a community's sustainable development.

ecoBUDGET and Local Environmental Accounting

If one treats *ecoBUDGET* as a complement and not an alternative to the local agenda 21 process, both systems contribute to the success of the other. When coupled with local agenda 21, *ecoBUDGET* is supported in its drive to integrate external actors into the process and to ensure their participation in the achievement of targets through voluntary commitments. Local politicians or experts cannot set the indicators and targets of the environmental budget alone. Because the most important themes are defined when the indicators are chosen, this can only be done in collaboration with the actors, who carry out the measures that are necessary for achieving the agreed targets. Scientific arguments will be presented at the time when the targets are set, but the decision as to which are to be recognised and how they are to be weighted, is a question for society as a whole. An agenda 21 Forum can serve as a platform to reach an agreement on this before the proposed targets are presented to the council for ratification.

The vision and objectives of local agenda 21 go hand in hand with the voluntary commitments of the environmental budget. The conversion of the objectives from local agenda 21 into time-related, quantified environmental targets, which are to be achieved in the coming environmental budget year, is carried out through collaboration between the local administration and the actors in the agenda-forum.

The leadership for the implementation of the environmental budget lies with the local administration, which prepares and implements the local authority measures that in turn rely upon the agreement of the agenda-forum. In the forum, the various actors agree to the different voluntary measures and acknowledge their individual responsibilities for their implementation.

Through the LA21 Forum, *ecoBUDGET* monitors whether commitments made by the various actors are being complied with, and when required, presses for the implementation of measures. In this way, all economic sectors of a local authority are prompted to keep their environmental consumption within the budgeted limits. The environmental budget therefore encourages industry, commerce, and private households to comply with their commitments and to implement the measures for which they are responsible.

By contributing to the definition of the environmental budget, the community is made aware that each individual carries a certain responsibility for making sure the budget is followed. The environmental budget balance therefore acts not only as an accountability report of the local administration's actions vis-à-vis the council, but also of the agenda 21 groups and of the whole community vis-à-vis itself. The environmental budget report serves as a basis for monitoring success of the local authority action plan.

Where the linking of the *ecoBUDGET* process with that of local agenda 21 is concerned, different local authorities have different requirements. There are local authorities that have already introduced *ecoBUDGET*, or are striving to do this, which are perhaps not far enough advanced in their agenda 21 process to build further on a local action plan. Others wish to introduce *ecoBUDGET* into the local administration independently of local agenda 21.

Whatever the situation, it is crucial that the environmental budget and the local authority accord with each other. The environmental budget must therefore, as with other similar schemes, be compared and adjusted in accordance with the local authority action plan. Only then can it fulfil its role as a monitoring and management instrument for the local authority action plan.

3.3 *eco*BUDGET and Local Environmental Accounting

*eco*BUDGET and environmental accounting stem from the same roots - i.e. the concept of 'environmental budgeting' and its similarities with financial budgeting. They are both political approaches. They are both used to raise the profile of environmental issues and incorporate them into decision-making and planning procedures by imitating the financial budgeting cycle. But despite their close relationship, the two instruments are not the same and local political decision-making can profit from combining their different strengths. This chapter presents possible approaches to the combined use of *eco*BUDGET and environmental accounting.

3.3.1 Environmental Accounting: information for planning

As its name suggests, environmental accounting (EA) is a way of representing environmental costs in some form of account. It is used to provide environmental information in planning and decision-making processes. The environmental information required might be quantities such as extraction of minerals, decrease in air quality, emissions of specific pollutants to air, water or land and consumption of water, land-use, waste recycling or materials flows. Information regarding the costs related to these quantities is rarely included in financial accounts. environmental accounting aims to identify hidden costs related to the environmental effects (direct, indirect, long and short-term) of an organisation and to provide a way of representing this information in a useful way.

There are various methods, which come under the umbrella of environmental accounting. Most frequently, environmental costs are represented as monetary values. This information can then be incorporated into existing (financial) accounting procedures or annual reports. Some work on environmental accounting is concerned with developing specific environmental cost accounting systems, for example "satellite accounts," which complement the economic information drawn from accounts without modifying the conventional system. The environmental state and degradation are represented in physical units or by indices, instead of monetary values. This approach is shared by several other methods.

Further variations in this type of environmental accounting are based on whether tools aggregate the information on different environmental quantities. Tools that aggregate the separate environmental quantities show this information in one figure, in a single unit, which represents everything from air quality reduction, groundwater reduction, noise pollution etc. Tools that do not aggregate the different environmental quantities will present the information relating to them separately, usually resulting in increased transparency.

Environmental accounting developments have been taking place on various levels, e.g. national and regional statistical bodies are concerned with natural resource accounting, usually for individual sectors such as water resources or forests. Statistics Denmark has run a project on natural resource accounting, using both physical and monetary units to account for stocks and use of natural resources in Denmark. Eurostat (European Union Statistics Office) has encouraged and co-ordinated production of environmental accounts by its member states, corresponding to EU and national policy needs. In Spain, where scarcity of water and water management are high priority concerns, water accounts have been providing information on quantity of water, quality of surface water and economic implications. The overall aim of using environmental accounting remains: To provide information to management, decision-makers and stakeholders.

3.3.2 Environmental Accounting in Local Governments - the CLEAR project

The principles of the EU LIFE project CLEAR - City and local environmental accounting and Reporting, carried out between 2001 and 2003 in Italy, are portrayed by

- Identification and classification of investment and operational expenditure and non expenditure in order to incorporate environmental variables and more generally include sustainable development options in decision-making processes.
- Provision of public administrators with a tool to collect, record, manage and communicate costs and environmental benefits for all their actions on the territory.
- Spreading of knowledge, transparency and environmental responsibility at all institutional and decisional levels.

The local governments involved in CLEAR have introduced environmental accounting in their administration. They developed an environmental budget as a satellite to their financial budget, comprising of both, monetary and physical data regarding the state of environment within the municipal territory. Physical accounts are presented as a set of eight tables for eight areas of "local competencies" (i.e. legal responsibilities) associated with recommended indicators. Monetary accounts present a reclassification of previous financial budgets according to investments and costs impacting the environment. This reclassification basically is an identification and allocation of local expenses with regard to the areas of local competencies related to the environment, i.e. connected to protection of natural resources, to activities that directly or indirectly create impacts on the environment, and to those directed at sustainability.

"The wealth of data, knowledge and analyses that we find in many reports on the state of the environment, as well as the final purpose given to statistical and information systems regarding the environment, are put in the service of a procedure which urges the political bodies to assume, not only the duty to know the state of the environment, but also that of taking responsibility for the organisation of data according to schemes useful to the evaluation process, for accounts that have their place in the political debate as well as vis-à-vis public opinion."

F. Giovanelli, 2003.

The 'Environmental Budget' in fact incorporates two different budgets: a so-called 'Final Budget' recording results of measures achieved during the passed budgeting period and a so-called 'Projected Budget' presenting an assessment of expected impacts of measures intended to be carried out during the actual budget period. In the CLEAR project, the environmental budget was approved by the Councils along with the financial budget and a report was presented at the end of the budget period.

It must be recognised that adding environmental considerations to financial accounting will not solve environmental problems by itself. The management of the resulting information must be linked with the use of an environmental management system in order to set targets, and implement and monitor actions in a structured, target-oriented way. This is why combined or even integrated application of environmental accounting and ecoBUDGET could advance local environmental management.

The City of Ferrara has been involved in the CLEAR project and introduced environmental

accounting together with *ecoBUDGET*. The experiences presented in the box outline the path to combination of the two approaches.

ecoBUDGET and Environmental Accountability. City of Ferrara, Italy

The City of Ferrara has introduced Environmental Accountability according to the CLEAR methodology in parallel to ecoBUDGET. The involvement in two EU LIFE projects had provided them with this unique opportunity driven by the Environmental Mayor's, as 'political champion', interest to filter environmental issues into political decision making.. Ferrara already had a long environmental and sustainability tradition with a successful LA 21 process. But political commitment was lacking. The idea to integrate Environmental Accountability and ecoBUDGET was fostered by the idea to have both an instrument to review environmental impacts of the financial budget as well as a budgeting and management tool for environmental resources. The integration was established through the use of environmental indicators, which were selected from the existing Local Agenda 21. The CLEAR methodology allowed for detailed reporting of the environmental impacts in 8 areas of competencies, whereas the ecoBUDGET process allowed for developing strategic and operative targets, provided the management system and allowed to perform the monitoring. Both, the environmental accounting report and the environmental budget balance were presented in the so-called Bilancia Ambientale. Ferrara is keen to further develop and promote the integrated application of the two approaches.

3.3.3 Complementary elements: *ecoBUDGET* and CLEAR

Local political decision making can profit from combining the strengths of *ecoBUDGET* as decision support and environmental management system for natural resources together with the transformation of the information given into monetary terms through an approach to environmental accounting. Using monetary terms for environmental information certainly highlights the financial significance of environmental issues and the interdependence of economy and environment. It ensures that environmental issues enter the political discussion, as the Council must discuss the budget, so they cannot ignore the environmental issues represented in it. By combining *ecoBUDGET* and environmental accounting, decision-makers would hold comprehensive information both in monetary and physical values. Furthermore, they would hold an integrated information and management system for natural and financial resources related to the environment.

Environmental accounting can be described as a group of tools, which construct accounts for environmental quantities, providing information for managers, decision-makers and stakeholders either in reports or as part of the conventional/financial budget. It is a method that uses monetary values to represent environmental costs, mainly used as an information system for decision-makers, bringing (sometimes hidden) environmental costs into the conventional assessment of projects and budgets. Environmental accounting involves running accounts for environmental quantities. It is not itself an EMS, but is starting to be used in local authorities as part of their environmental management. It lacks target setting, monitoring and evaluation as important management mechanisms. However, environmental accounting used with an environmental management system can ensure that the information used for political decisions will result in sound environmental action.

ecoBUDGET takes this further, by supplying a ready made environmental management system for local authorities. Part of the system is also a type of environmental accounting. Furthermore, *ecoBUDGET* anchors the environmental management into the administrative and political structure to ensure that the information is used in a controlled way for the sustain-

Strategic environmental Assessment through *ecoBUDGET*

able management of the local environment. We can refer to *ecoBUDGET* as a hybrid as it incorporates both aspects of environmental accounting (i.e. accounting is part of the systems core elements) as well as an environmental management system. What is lacking in *ecoBUDGET* is the direct interface to local financial budgeting, as it does not use monetary values. At the same time, *ecoBUDGET* provides the management elements lacking in environmental accounting, which mainly can be called a reporting tool.

A combined application of *ecoBUDGET* and environmental accounting suggests added value

CLEAR	<i>ecoBUDGET</i>
Political ratification	Political ratification
Scope: whole geographical area	Scope: whole geographical area
Areas of competence and recommended indicators	Priority setting, indicator identification, and target setting
Cross-departmental communication and stakeholder involvement	Cross-departmental communication and stakeholder involvement
Environmental budget ('projected budget')	Environmental master budget
Monetary and physical indicators according to 8 areas of competence	Physical indicators according to local political priorities
Monetisation of environmental expenses	No monetisation of environmental expenses
No target setting	Long-term targets, short-term targets
Information and reporting scheme	Management scheme
'Final budget'	Environmental Budget Balance: Annual Balance, Statement of Environmental Assets, Environment-benefit analysis
Activity report	Environmental Budget Balance (Report)

Table 31. Added values-corresponding and complementary elements of *ecoBUDGET* and CLEAR

to political decision-making (see table 23). Both are rooted in environmental budgeting concepts, both aim at sustainable development and supporting political decision-making. Both are oriented at the whole geographical area of a municipality, city or county. The central element of both concepts is the involvement of political bodies and political legitimisation of the budget through council ratification.

The main differences are the indicator and target setting and management approach available in *ecoBUDGET* the application of monetarised information in environmental accounting. Integration can be founded on similar elements and especially the complementary ones.

An accounting framework using quantitative, qualitative and financial indicators could be devised, which enables development of objectives and targets for the *ecoBUDGET* system. It would allow transparency of the operational activities for the planning and decision-making strategies. The objectives should be incorporated into the annual budget for administrative and operational units. Stakeholders should also propose environmental targets and actions to

work towards these objectives. The targets should be approved by the city council as a part of the official budget and the accomplishment of objectives and targets should be monitored and reported. This is how an integrated environmental budgeting concept can be incorporated into local government procedures and politics. This in turn can be part of the broader environmental management system and priority setting.

3.4 Strategic Environmental Assessment through *eco*BUDGET

In June 2001, the European Council formally adopted the Directive 2001/42/EC, on the assessment of the effects of certain plans and programmes on the environment, better known as the strategic environmental assessment or SEA Directive. The directive has to be transferred into national legislation until July 2004. That means, that all European local authorities will have to apply strategic environmental assessment as soon as it is set into force through national legislation. This chapter will present experiences with linking *eco*BUDGET with strategic environmental assessment.

3.4.1 Background

Objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development, by ensuring that an environmental assessment is carried out of all plans and programmes which are likely to have significant effects on the environment. Subject to assessment are all plans and programmes, which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and which set the framework for future development.

Core of SEA is an environmental report, which describes and evaluates environmental impacts of plans and programmes. The report has to serve as argument in decision making processes. This aims at avoidance of those plans and programmes with negative environmental impacts.

Application of any management system need to ensure integration of instruments and efficiency of administrative processes. To this end, *eco*BUDGET need to provide a supportive framework for implementation of mandatory SEA.

3.4.2 Experiences. City of Bologna, Italy

Bologna in Northern Italy is from 2000 subjected to a new regional law regarding the inclusion of environmental and sustainable considerations in city or town planning. This law, Emilia-Romagna Regional Law 20/2000, considers two stages of strategic environmental assessment (Originally named ValSAT) (SEA) for the structure plan of the city or town. The first stage of the SEA is a qualitative analysis of planned policies and actions (Preliminary documents). This phase is also an evaluation of environmental impacts and risks related to the actions in the structure plan. However, the purpose of the analysis is to identify strategic considerations at a general or conceptual level, rather than evaluating quantitative, detailed environmental impacts. In short, the analysis should:

- Identify the direct and indirect outcomes associated with implementing the proposal of the Structure Plan.
- Consider whether outcomes could affect any component of the environment.

Strategic environmental Assessment through ecoBUDGET

The second stage of the SEA is a quantitative phase, where the preliminary document is revised and quantified thus presented in a revised plan (Final documents).

In order to create a foundation for the quantitative phase, baseline data has to be collected. This will give the analysis a base from where comparisons can be made. Data has to be identified for each resource or topic that is included in the preliminary document and should cover:

- Resource/topic
- general sustainability objectives
- specific sustainability objectives
- selected indicators
- references/sources

Figure 16 is a graphical presentation of sources within the city of Bologna for resource and indicator identification. As can be seen in the figure, several sources have been used in order to cover all three elements of sustainability. It is obvious, that *ecoBUDGET* is included here since the system includes politically ratified resources and indicators from both the urban and natural environment.

Furthermore, *ecoBUDGET* also plays a vital role in supporting the environmental evaluation

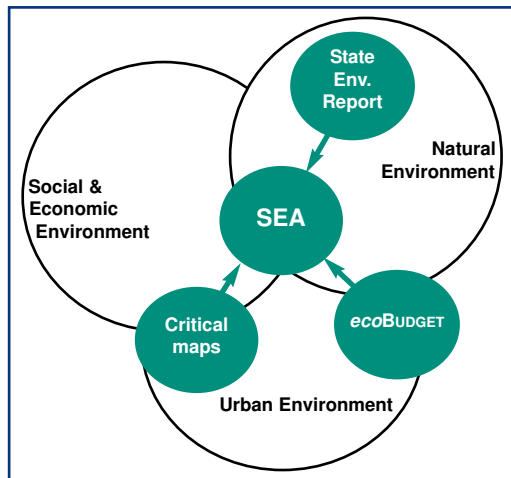


Figure 16:
Resource/ topic and indicator identification for the SEA process in the City of Bologna.

of different scenarios defined by the new Structure Plan of the City. *ecoBUDGET* facilitates evaluation of the environmental effects through comparing the selected indicators and mid-term targets from scenario to scenario. Equally, SEA can be used for environmental budget control in order improve plans in terms of minimising negative effects and consequences of "ecological overspending".

3.4.3 Further integration of *ecoBUDGET* and strategic environmental assessment.

ecoBUDGET acts as a primary instrument for reorganising work stages into a uniform and cyclic process. Establishing targets for political commitments places demands on the format

and orientation of the available tools and this can be used to increase their effectiveness. Periodic accounting introduces a time component into local politics and planning. This introduces an additional management aspect into a local authority's environmental activities and counters one of the main shortfalls of 'traditional', spatial environmental planning.

Local environmental budgeting clearly displays synergies with **strategic** environmental assessment in that it provides the organisational and procedural framework (with jurisdictions, responsibilities and mandatory reporting) into which the SEA can be integrated. Furthermore, it provides yardsticks and indicators required for an assessment of the actual environmental situation. In this way, the environmental budget plan provides (politically determined) short- and long-term environmental targets. Such targets can then provide a framework and be used as yardsticks for assessing environmental effects. When implementing the environmental budget plan, the SEA can be used to check whether a planned programme (measure) would remain within the budget framework or whether it would overstep the ecological budget limits. It therefore applies, to environmental budgeting, the principle of case-by-case estimation, which has proven its worth in public finance. Although results of such assessments can hardly be considered as substantive, legally enforceable standards, they can indicate the need for correction or replacement and can be used as an aid in the search for such an alternative.

The local SEA benefits greatly when an environmental budget with binding targets is drawn up, because it acquires the evaluation tools it lacked previously (e.g. as experiences with the environmental impact assessment).

Conversely, the knowledge resulting from the execution of the SEA can be taken into account in the drawing-up of the environmental budget. The interrelation between the environmental budget and the SEA outlined above can, to a great extent, harmonise the entities that are to be assessed.

The Bologna case suggests the inter-relationship between *eco*BUDGET and strategic environmental assessment. We could see that the two instruments co-operated in several areas. In general, this is true also for most other environmental initiatives. As a conclusion one can state that *eco*BUDGET can act as political funnel, channelling information and data between the political sphere and stakeholders and vice-versa.

The benefits from the *eco*BUDGET process for the implementation of the SEA directive can in short be described as:

1. Providing an instrument to monitor and manage the natural resources.
2. Supplying a set of officially ratified environmental parameters (indicators, targets, etc.).
3. Supplying a set of updated parameters for monitoring the planning process.
4. Supplying an established management framework and organisational structure supports SEA procedures
5. Providing environmental data and information for SEA
6. Providing monitoring and accounting features

Based on the experiences Bologna and others, we can elicit a number of *eco*BUDGET elements where this co-operation between *eco*BUDGET and SEA - as well as other environmental management instruments like environmental impact assessment - can be particularly effective and beneficial:

Integration between *eco*BUDGET and financial budgeting

1. *Fundamental data*

Using environmental information systems and storing data in a central location (*eco*BUDGET Co-ordination Team) avoids repetition of tasks and helps to limit the time expenditure associated with licensing procedures.

2. *Determining targets*

The protection, cleaning-up and development of environmental resources as well as individual environmental laws or guidelines and regulations from regional, national or European level all requires general and specific targets for execution and evaluation. These general targets can be integrated into the environmental budget in the form of minimum requirements governing the specified targets.

3. *Planning measures*

The multitude of individual measures derived from targets outlined in the environmental budget merge to form a coherent, overall picture of a local authority's sustainable development.

4. *Accounting*

The environmental budget accounting process is substantiated by eco-accounts in the spatial planning sector and by the EMAS audit in the administrative sector. In addition, the impacts of individual projects can be evaluated using an environmental impact assessment.

5. *Reporting system*

A new form of environmental auditing which assesses the degree of success - or failure - in the attainment of specified targets is being introduced into local authority business in the form of periodic reporting. Raising the status of the reporting system from an old-style environmental report to an auditing report intended for political decision-making and management has also bridged the gap to modern administrative procedures.

Existing environmental planning and management tools are brought together under one roof - *eco*BUDGET. And the stages involved in managing local authority environmental consumption - stocktaking, target setting, monitoring, assessment and action - are systematised.

3.5 Integration between *eco*BUDGET and financial budgeting

At first glance, financial and environmental management has little in common. However, as previous chapters reveal, both financial and environmental management is designed to budget scarce resources. In the past, humanity could take advantage of environmental resource without any significant effect or impacts. During the industrialisation period, natural resources became scarce goods subject to competitive consumption, resulting in the need for budgeting natural resources in financial terms. This budgeting focused only on "traditional resources" (e.g. raw materials and land use) and was only aimed at the economic management of these resources. The environmental problems facing us today requires a wider budgeting perspective, including also "intangible" resources (e.g. air, silence or water) and socio-economic concerns. Local administrations committed to sustainable development face increasing demands to budget all of its resources (money, time, human resources, air, soil, water, etc.) according to **sustainability principles**, including environmental, social and economic aspects and impacts. In this respect, the economic outlook is covered in financial budgeting, the environmental by *eco*BUDGET and the social (sometimes) by social accounting. However, it is fairly obvious that it would be beneficial to integrate these approaches,

since sustainable development builds on the integrative management of these three pillars (economic, social and environmental). The following chapters will describe how integration between *eco*BUDGET and financial budgeting can be realised and how this will take a local authority further on the road to sustainability.

3.5.1 Background

Local authority administration is traditionally identified with unyielding supervision in key areas. Traditionally, this has been performed by separate, although related, systems. For example, financial budgeting very often dictates the scene for all other departments of the authority, in terms of allocated funds (e.g. costs such as personnel, investments or rent) and required or anticipated income (e.g. sales, rent...). Human resources, for example, receives a framework for total salary increases or decreases during the budget year and reports results back to the financial department at the end of the year. Similarly, the technical department has a general framework for costs, investments and required delivery of services that generate income. This department, too, reports on the result at the end of the year. Through this, a local administration using traditional financial practices creates a situation, where departments are punished for more efficient management of (financial) resources. Typically, a department saving allocated (financial) resources will receive a reduced funding in the forthcoming budget. In turn this will lead to a separation of responsibility for the means used from the result produced, which contributes to a lack of overall transparency.

Following the above argument, traditional budget discussions in the political arena consequently focus on the resources used. The attained results and, particularly, the effects of the process are not the main focus of these discussions. Hence, targets for the budget are predominantly defined in terms of (financial) resource use and to some extent (economic) results instead of focusing on desired effect from a communal perspective. At the same time, their constituency often binds politicians, trying to influence individual targets in accordance with party agendas - often resulting in additional financial focus. Managing in this way does not give sufficient consideration to the citizens' needs and expectations. The identifiable shortfalls in local, input-oriented (finance) administration management are also reflected in local environmental activities.

Environmental management is usually located in the environment department parallel to other departments in the local authority, thus operates under the same conditions as other departments. But the situation is even more precarious when it comes to environmental issues, partly because targets need to be more long-term and partly because targets and effects are very difficult to express in financial terms. A financial budget operates generally on an annual cycle and a long-term financial planning for certain investment issues on 5 or 10 (sometimes longer) years' basis. In an environmental perspective this is a very short time frame. Environmental issues usually need a minimum of 5 to 10 years to show visible results, that is why *eco*BUDGET has long-term (strategic) targets which are broken down to annual (operative) targets. Secondly, expressing environmental benefits in economic terms is under intense scrutiny and very insecure and subjective. *eco*BUDGET therefore chooses to avoid this approach. Instead, the thought is to express environmental (and social) benefits in a more common, comprehensible and transparent fashion. The foundation for this is based on a (fairly) common political acceptance of evaluating social investments (e.g. a sport complex or a playground) in other terms than purely financial gains. In these cases politicians are more perceptive to public opinion, thus more willing to listen to alternative arguments. The interesting thing here is that the decision in itself is mainly financial and the "project" has a strong

Integration between *eco*BUDGET and financial budgeting

linkage to financial budgeting. *eco*BUDGET strives to gain the same acceptance as this type of local investments, but at the same time to secure a long-term, politically and publicly accepted status for the system as such. This is perhaps the most promising path to filter environmental considerations into "everyday" management and decision making and definitely a step towards an integrated management of all resources available to local authorities.

3.5.2 Experiences. City of Växjö, Sweden

The *eco*BUDGET link to the financial budgeting process has been the main focus for Växjö municipality. The *eco*BUDGET and financial integration can according to Växjö be classified according to three stages; (i) simultaneous financial and environmental budgeting, (ii) incorporate financial and environmental budgeting in the same document, (iii) obtain a financial and environmental target discussion with conscious trade-offs. The first stage simply refers to the simultaneous set up of the two budgets. The result is still two separate budgets. However they are similarly placed in time, thus politically ratified at the same time. Second stage is more integrated, where the two budgets are presented as one steering document. This implies a more integrated work progress within the municipal organisation between the environmental and economic functions as well as awareness raising in both the administration and the political sphere about the two different steering areas being one. Third stage refers to a deeper political involvement, where both environmental and financial targets and issues are discussed in relation to each other.

According to above hierarchy most departments in Växjö municipality have reached the second stage of integration between *eco*BUDGET and financial budgeting, although some well-planned departments have also reached the third level. The challenge for coming *eco*BUDGET years is therefore to lift the entire organisation to the third level.

In Växjö the environmental budget is included in the financial budget. In this way, environmental issues will be visible during normal budget discussions and show a better link between financial decisions and environmental impact. In order to facilitate this, the environmental budget has to be constructed with a financial addition to the normal preparation. It is normal *eco*BUDGET practice to complement the environmental budget with a plan of measures. The addition in Växjö has been to include a revenue column in the template for the plan of measures (see table 33).

Agenda 21 target area:

Agenda 21 target area:						
Indicator	Unit	Reference value (year)	Previous value (2003)	Short-term target 2005	Long-term target (year)	Revenues
Measures To reach short-term and long-term target		Responsible	Due date	Available resources 2005	Resource demand 2006-2007	Calculated economic savings (time span)

Table 32. Example of financial integration into plan of measures in Växjö municipality.

There is a noticeable difference in how departments have filled out this template. Most departments have managed to include financial costs for the environmental measures, although smaller measures sometimes seem to be performed within the normal budget frame. The revenue column of the *ecoBUDGET* template is newly introduced the 2004 budget year and has so far not been used by the departments. The reason is probably because of the difficulty to appreciate revenues from environmental initiatives. Some of these revenues are not likely to be expressed in economic terms, but rather in terms of quality of life or community good, such as cycle paths or recreation areas.

Växjö municipality will continue to develop the integration between the environmental budget, i.e. costs and revenues resulting from measures, and the financial budget. The next steps are to raise departmental and political awareness of environmental issues, so that the integration between the two systems will reach stage three throughout the municipality. Through this, it is anticipated that the public, administrative and political debate will include more environmental concerns, thus increasing acceptance of "indirect" revenues.

3.5.3 Further development of the integration of *ecoBUDGET* into financial budgeting

The connection between the environmental management system and the financial management system has proven successful in Växjö. This connection gives *ecoBUDGET* - thus environmental considerations - status within the administration and with politicians. The financial management system has always been regarded as the most important local management system, where the financial budget is often considered as the primary steering document for local authorities. By including *ecoBUDGET* into this document, environmental issues will increase their visibility and importance with politicians and local administration in particular. Environmental resources will through this become more equal to financial resources. The financial budget is generally a concern of intense political (sometimes public) debate. Political parties, stakeholders, interest groups and private individuals usually have rather different opinions on allocation and distribution of financial resources. *ecoBUDGET* could here gain a platform for political and public debate and discussion, raising environmental issues from a marginal departmental concern to a central administrative and political question.

Also the environmental management system gains existing routines and time frames from the financial system. The annual cycle of *ecoBUDGET* is a direct copy of the financial budgeting system. Environmental issues normally demand substantially longer time frames for targets and goals to show noticeable effect. However, by setting long-term targets and dividing these into annual targets, politicians and public will gain a comprehensive picture of the environmental situation in the community. Adding to this, routines for financial reporting and communication are already in place within local authorities, which means that the *ecoBUDGET* process will be easier to implement, since these elements are already in place. Above all, this allows for *ecoBUDGET* to mature much faster than other environmental management systems, since the time needed for the system to settle in the authority is considerably less. Implementing the two systems independently will require a certain amount of staff and of time. An integrated *ecoBUDGET* and financial system naturally requires the same data input as two independent systems, however the staff and time capacity needed will be slightly decreased. In other words, an integrated approach does not only provide a better environmental awareness and concern amongst politicians, staff and the public, but it also saves financial resources through co-ordination and efficiency benefits.

Integration between *eco*BUDGET and financial budgeting

For individuals familiar with economic terminology, the resemblance in *eco*BUDGET has been appreciated and acknowledged. In particular, politicians and senior management are comfortable with financial terminology, which allows for them to quickly grasp the *eco*BUDGET concept. Most individuals are more or less accustomed to the principles of budgeting and accounting, thus possess the minimum necessary knowledge to internalise the *eco*BUDGET methodology. However, the similarities in terminology between *eco*BUDGET and financial budgeting can also cause confusion. People approaching *eco*BUDGET for the first time normally expect a budget to be carried out in financial units and not, as is the case with *eco*BUDGET, physical units. This means that each budget line in *eco*BUDGET is individual, since each resource is based on different numerical values. Budget lines can therefore not be compared to each other, which at first glance can be difficult to grasp. The term statement of environmental assets - as one part of the environmental budget balance - may cause confusion as people acquainted with financial accounting expect a balance (assets and debts) to be presented. *eco*BUDGET only presents environmental assets, since the concept of debt requires a common base unit so that resources can be transferred between budget lines.

The *eco*BUDGET environment-benefit analysis has its financial counterpart in the cost-benefit ratio, however the concept in *eco*BUDGET is slightly different and causes therefore an added element to the integrated environmental and financial budget. The purpose of the environment-benefit analysis is to explain the communal and social benefits - what is described as 'quality of life' - of environmental protection, hence, further increase the need for political and public acceptance of "softer" or "indirect" revenue and benefit arguments.

In conclusion, one can state that environmental and financial budgeting can co-exist within one framework. To point out one main benefit with this integration from an environmental perspective, than it is that issues of environmental importance will gain visibility and significance within the local authority. From a financial perspective one has to point out two major benefits. Firstly, direct financial saving can be made through integrating the systems and secondly, indirectly and more long-term, the financial system will gain a model for expressing costs and revenues without necessarily putting a monetary value on the issues. So far, there has been no complete financial/environmental budget integration. However, substantial progress has been made, particularly in the city of Växjö, which shows the possibilities and potentials many of these barriers will be overcome with information, knowledge and time. Lastly, the concept of financial budgeting exists in every local authority, although with several different expressions and processes. An *eco*BUDGET and financial integration has therefore to be based on the individual authority's process and structure.

Glossary

Account: see component account.

Action target: reference of action for the environmental performance to achieve. Subcategory of environmental targets (cf. ICLEI 1998).

Annual balance: State of accounts at the end of the budget period. Summaries can be made according to spatial, geographical, material and other subdivisions, to show the make up of the account balance for each resource. Part of the environmental budget balance.

Budget estimates: Estimates by the co-ordination team, of the foreseen use of resources (or influencing factors) of each the local authority office/department (and possibly also relevant actors outside the local authority) for the coming environmental budget period. The estimates should take account of the past activities and foreseen measures and plans. Based on the spending forecasts from each office/department and are used as a basis for the environmental master budget.

Budget limits (short-term targets): Limits (short-term targets) set for the budget period, above, which the environmental spending is outside sustainable levels. In environmental budgeting the budget limits for each resource, are decided by a political decision on short-term (a budget cycle) targets (defined with reference to a scientific basis and derived from a realistic breakdown of the long-term targets (typically 5 - 15 years), taking into consideration the budget estimates).

Budget period: Time period needed for one environmental budgeting cycle. It could be one calendar year, it could be parallel to the financial budgeting (year) period or it could be designed specially, e.g. according to data availability for indicators.

Component account balance: State of the component account, showing status of an individual environmental spending indicator at the end of the environmental budget period. Part of the annual balance. Sectoral, geographical, material or other subdivisions of the environmental spending can be presented in sub-balances.

Component accounts: Account, logs spending/use of each resource. It shows the status of an individual environmental spending indicator during the environmental budget period. Accounts are generated using the indicators from the environmental budget. When a budget is converted into an account, planning is replaced with the recording of development during the budget period. At the beginning of the budget year, an account is "opened" for each component budget and its sectoral, spatial, or material subdivisions. Component budgets: Plan for one individual environmental spending indicator before the beginning of the environmental budget period. Sectoral, geographical, material or other subdivision of the foreseen use/expenditure of the environment in the coming budget period can be presented in sub-budgets.

Distance-to-target index: index that measures the status against a target, e.g. (E.) quality target. In the environmental budget balance the status of the indicators is shown by the distance-to-target index as a percentage of the total progress towards the long-term target, with the reference value (base year value) as a comparison. It is calculated with the following equation:

ecoBUDGET: The model developed by ICLEI and tested during the European LIFE project. The system implements environmental budgeting, giving definitions for the presentation as well as an organisational procedure. *ecoBUDGET* is implemented through a periodical cycle: The environmental budget plan is approved by the council and implemented during the budget period. At the end of the

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budget period an environmental budget balance is presented to the council (cf. ICLEI 1999).

Efficiency indicator: indicators, which provide and insight in the efficiency of products and processes. (EEA, 1999)

Environmental reduction target: benchmark for reducing environmental pressures, often expressed as a percentage of a reference value. Subcategory of environmental targets (cf. ICLEI 1998).

Environmental asset indicator: In environmental budgeting, indicators, which show the state of the environmental resources in the local area. A type of state indicator.

Environmental budget balance: final element of Environmental budgeting where the actual environmental spending during the past budget period is recorded and compared to the plan. Contains annual balance, sector and spatial summaries, the statement of environmental assets and environment-benefit analysis.

Environmental budget plan: Framework for environmental spending for the coming budget period. Made up of the environmental master budget and explanatory report. It gives the spending framework and background information, for agreement by the council, and then orientation for all activities in the locality (especially those which the local authority can influence), which have an effect on the environment, i.e. result in environmental spending.

Environmental budget report: A report to the council and public on the state of the environmental balance. Its main component consists of annual balance, sectoral and spatial summaries, the statement of environmental assets and environment-benefit analysis. A detailed attachment, explanatory report, shows measures, passed activities, trends, successes and problems of the past environ-

mental budgeting year. It is the final element of Environmental Budgeting where the actual environmental spending during the past budget period is recorded and compared to the plan. The environmental budget report must be suitable for its target audience, meaning that different versions of the explanatory report may have to be prepared, to be appropriate for the readers. The background technical details may be spared for the audiences specifically requiring them.

Environmental budgeting cycle: Periodical (usually analogue with the financial budgeting cycle) repeating cycle of *ecoBUDGET®* which consist of three phases: preparation of the environmental budget plan, implementation of the environmental budget plan and evaluation through the compilation of the environmental budget balance.

Environmental budgeting: Concept for forward-looking, binding annual planning of the spending/use of natural resources by various local actors. Implemented through the *ecoBUDGET* system.

Environmental consumption: See environmental spending

Environmental indicator: Parameter (for example physical or numerical value or proportion) that represents the status of a wider, usually more complex system, making it accessible. In environmental budgeting, environmental spending indicators are found in the environmental master budget and in the environmental budget balance, state indicators are found in the statement of environmental assets and environmental performance indicators are found in the environment-benefit analysis

Environmental issue: Structural category in environmental master budget to describe a single environmental problem. It could be attributed to one or several environmental indicators.

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Environmental master budget: core element of Environmental Budgeting containing environmental spending indicators and environmental targets. Tabular overview of the foreseen environmental spending for the coming budget period, the long-term targets. Environmental objective: overall environmental goal, arising from the environmental policy, that an organisation sets itself to achieve, and which is quantified where practicable (cf. ISO 14001 1996). Objectives can be based on guidelines and include a time reference.

Environmental performance: measurable results of the environmental management system, related to an organisation's control of its environmental aspects, based on its environmental policy, objectives and targets (cf. ISO 14001 1996).

Environmental quality target: Verbal description of the desired status of an environmental system. Subcategory of environmental targets (cf. ICLEI 1998).

Environmental Resource/Asset: In environmental budgeting, environmental good in the widest sense (e.g. raw materials, pollutant sinks, regeneration potential, and stability of life-sustaining conditions). An environmental good, which is essential for human life, which man cannot reproduce or regenerate by itself. Environmental resources can be affected and degraded by human living, having a negative effect on quality of life. Environmental resources are used as categories in the environmental budget.

Environmental spending indicator: Parameter that shows the spending/use of a natural resource in the local area. In environmental budgeting the environmental spending indicator can be found in the environmental budget cycle and in the component budgets, accounts and balance, depending on the stage of implementation. A type of pressure indicator.

Environmental spending: use of environmental resources by locally situated actors (e.g. citizens, industry).

Environmental target: description of environmentally motivated aims to be achieved, quantified where practicable, applicable to the organisation that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives (cf. ISO 14001 1996). Targets are based on guidelines and include a time reference. Can be (E.) quality targets, reduction targets, action targets (cf. ICLEI 1998).

Environment-benefit analysis: Part of the environmental budget balance, which shows the efficiency of the use of natural resources for the fulfilment of human requirements, through performance/efficiency indicators. It serves to sharpen the perspective that use of resources is the foundation for human life and economic activity. It is an interface for local environmental issues with social and economic aspects of local activities.

Evaluation phase:

Similar to financial "closing of books". The performance of the year is evaluated and reported. Next years budget will be based on these findings.

Expenditure: Term from financial budgeting, meaning the reduction of the available money for the local authority. In environmental budgeting it relates to environmental spending.

Explanatory report: Report, compiled by the co-ordination team, giving framework conditions for the use of resources (e.g. legislation, local-planning) background information on indicators and their progress. It is used as a basis for all the reports throughout the environmental budget period and is altered/updated depending on the status of the indicators, new information and the needs of the target audience. It first appears as preliminary report to the individual

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offices/departments, for essential information whilst compiling their spending forecasts. Secondly it is used as part of the environmental budget plan, as it shows the framework conditions for the Environmental master budget. It serves as an information resource for the council and the public and as a significant basis for analysis of the ecological performance and accountability of the local authority during the environmental budget period. An updated version of the explanatory report is also used for the environmental budget report.

Financial budget plan: Tabular overview of the planned income and expenditure in the budget period.

Financial budgeting: General term for the local government instrument and the application principles for administration of financial resources of the local authority.

Implementation phase:

The actual execution of the environmental budget, where measures and actions are carried out and impacts on environmental resources monitored in order to fulfill the environmental budget.

Inaugural phase:

The initial set up of the pre-conditions for the first introduction of *ecoBUDGET*. Inaugural Phase concerns the organisational set-up of *ecoBUDGET* as well as the process to develop environmental indicators and targets from priority issues and resources. This phase is only done once in the local authority, will not reoccur annually.

Income: Term from financial budgeting, meaning the increase in money available for use by the local authority. In environmental budgeting it means the ecological income - positive, ecological performance of the local authority, which leads to increased availability of environmental resources. Measures, which lead to a decrease e.g. in pollutant emissions, are not booked as income, but as

less environmental spending. In the event of ecological income the spending framework can be extended during the environmental budget period.

Internal audit: Evaluation at the end of the environmental budget period of process organisation and performance of the recent budget period. The internal auditing process allows the verification of whether or not the procedures applied throughout the cycle proved sound and appropriate to a) perform in the most effective and efficient way, and b) comply with the *ecoBUDGET* requirements.

Local Agenda 21: the mandate given by the UNCED Earth Summit in Rio 1992. Chapter 28 calls upon local authorities to create action plans (cf. ICLEI 1998).

Managerial directives: Operational rules for the administration to ensure a common basis for unquestioned work progress signed by the mayor. They are of particular importance for a smooth and efficient process flow and the co-operation between the Co-ordination Team and further actors, including other departments, political bodies, external entities (like municipally owned companies) and stakeholders. Managerial directives typically establish definitions, procedures, roles, responsibilities and due dates, communication structure, data-flow and format, reporting and documentation.

Long-term target: Limit, above, which the environmental spending is outside sustainable levels. In environmental budgeting an assumption as to where this limit should lie for each resource, is decided by a political decision on long-term targets (defined with reference to a scientific basis).

Over-budget expenditure: arises when an existing budget estimate is exceeded.

Performance indicators: indicators, which compare the factual conditions with a specific set of reference conditions. (EEA, 1999)

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Preliminary report: A report compiled by the *ecoBUDGET* co-ordination team, detailing the environmental spending framework and given to the individual departments/offices in order for them to prepare their spending forecasts for the coming budget year.

Preparation phase:

The preparation and set-up of necessary structures for the annual implementation of *ecoBUDGET*. The p. phase concerns preparing the authority for the different elements of *ecoBUDGET* and allocating resources and knowledge of the system. The preparation phase is completed by council ratification of the environmental master budget.

Pressure indicators: indicators, which describe developments in release of substances, physical and biological agents, the use of resources and the use of land. (EEA, 1999)

Resource: see Environmental resource

Reference value: Column in environmental master budget and annual budget sheet presenting previous year's values of each account

Short-term targets: See budget limits

Spending forecast: Registration by the relevant offices and departments (and possibly also relevant actors outside the local authority) of their foreseen environmental spending (or influencing factors) for the coming budget period. Spending forecasts are then turned into budget estimates by the co-ordination team.

Spending framework: The framework showing the available (financial/environmental) resources for use by the local authority. In environmental budgeting, the framework shows the extent within which environmental spending can move, giving information on local conditions, commitments and developments, legislation and guidelines relevant to the local environmental resources. It

also gives a concrete budget ceiling, based on the limits and long-term target given in the environmental master budget.

State indicators: indicators, which give a description of the quantity and quality of physical, biological or chemical phenomena in a certain area. They may for instance describe the wildlife resources. (EEA, 1999)

Statement of environmental assets: Tabular summary showing the status of the individual environmental resource in the local authority's area of jurisdiction. It portrays the resource in its positive element, using state indicators, rather than the pressure indicators used in the accounts. It should show ecological performance, i.e. investments in the capability for performance/use of the natural resources. Long-term trends should be visible. The statement of environmental assets is included in the Environmental Budget Report.

Unbudgeted expenditure: Unbudgeted expenditure occurs where no provision for the spending in question is present in the environmental budget, forcing the local administration to add a new budget heading retrospectively (supplementary budget).

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The *eco*BUDGET guide

STEP BY STEP TO LOCAL ENVIRONMENTAL SUSTAINABILITY

ecoBUDGET is an effective and flexible instrument for implementing environmental budgeting at the local level. European local authorities have developed the method in co-operation with ICLEI – Local Governments for Sustainability. ecoBUDGET thereby has become inherently adaptable to different local needs and demands. This local environmental management system provides decision makers, administrative staff and community inhabitants with an easy to follow framework, for environmental and sustainable work. This guide contains a complete theoretical outline for understanding the background and development of ecoBUDGET followed by a detailed and in-depth description of the practical implementation of the method. This guide has been developed based on experiences of Amaroussion (Greece), Bologna (Italy), Ferrara (Italy), Kalithea (Greece), Lewes (Great Britain) and Växjö (Sweden), and several examples from these pioneer ecoBUDGETers are provided.

