ecoBudget Guide
for Asian Local Authorities
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Tribute to a beloved partner and friend

Just before this manual was to be printed, one of our dearest partners in Bohol passed away. Atty. Juanito Goyeneche Cambangay, or Nitz as he is fondly called, was not just a colleague to us in ecoBudget - he was a friend, a brother, and a mentor to us all.

Nitz contributed much to the development of ecoBudget as an instrument for poverty alleviation and resource management. He also shared his generous wisdom and his intelligent gentleness with every person he dealt with, whether a mayor, a young student, a governor, or just a folk from a simple village. Bohol will never be the same without him.

It is an extremely bitter moment for all of us in ecoBudget, with whom he shared the last three years. We are greatly saddened by his loss. But in our sad hearts, there will always be a small place for happiness: the happiness that once he lived and brought his legacy of development to many corners of the world. His essence will remain in our memories. His embodiment as a worker for humanity will always inspire us while his boldness to venture and walk the roads less traveled will continue to challenge to us to do more for our local communities and the world.

He will always live in the hearts and minds of the countless people whose lives he touched.

With great affection and sincerity, this manual is dedicated to Nitz.

The ecoBudget Asia Consortium
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Nowadays, there are two ways to view development. The first considers monetary profit as being the only criterion to measure success. The second ensures that the impassable thresholds of workers’ dignity are not violated, that natural resources are conserved and that human health is not jeopardised. I believe that ecoBUDGET is instrumental for cities that strive to pursue the second form of development.
It is with great pride and deep gratitude that I, along with the Chief Executives of our ecoBudget partner cities, present this ecoBudget ASIA Manual to the rest of the world. I take great pride in the knowledge that the Province of Bohol, particularly the Municipality of Tubigon, has been a successful project partner in the pilot stage of ecoBudget ASIA. I am also filled with gratitude to the European Commission, ICLEI, and our partner cities of Bologna, Växjö and Guntur for their inestimable assistance to us in this pilot project.

As Provincial Governor of Bohol, an island province in the Philippines, I can very well relate to the imperative for environmental sustainability in the midst of development efforts, and am all too familiar with the dilemma of balancing environmental conservation efforts and sustainable natural resource use with the urgency for maintaining livelihoods for rural communities in the light of poverty reduction and economic growth priorities.

This balancing act is a tall order for any local government, and ecoBudget ASIA has given us the perfect tool to address this dilemma. In fact, the success of Tubigon in its pilot stage of the ecoBudget ASIA project has roused the interest of other municipal local governments throughout Bohol. In my humble opinion, this is a project that is ripe and ready for replication.

The publication of this ecoBudget ASIA Manual, therefore, comes at just the right time. With our experience of success in Tubigon in hand, we are ready to replicate the project in other local governments, with this Manual serving as a handy reference to those local governments that wish to play a more responsible role as stewards of their natural resources.

Let this be the first step in our global advocacy for environmentally-responsible local governance!
As the Mayor of the first Asian city to introduce ecoBudget to Asia, it is with great pleasure that I introduce this Manual of ecoBudget for Asian Countries. The application of ecoBudget in the Asian cities of Guntur and Tubigon has helped to fine tune and adjust the process of ecoBudget to Asian conditions.

This manual, based on the experiences of the implementation of ecoBudget in Asia, will help Asian cities to draw up their own environmental budgets and manage their resources efficiently.

The city of Guntur found in the process of ecoBudget an extremely opportune method to manage its environmental resources and attain sustainable development in a systematic manner. The city, being the district headquarters, faces rapid urbanization and has a large floating population, and is naturally plagued by related environmental and developmental problems. The Guntur Municipal Corporation (GMC) applied the process of ecoBudget to relevant environmental issues such as water quality and quantity, waste management, greenery development and air quality. Implementation of ecoBudget has helped to incorporate environmental issues in its routine administration in Guntur.

In spite of challenges like lack of coordination or financial resources and initial scepticism of government officials, ecoBudget was fairly successfully implemented in Guntur and innovatively addressed problems of each of the resources identified. The programme has also generated jobs through its various activities and has been largely accepted by the citizens of Guntur by addressing common problems.

In most of the cities in India and also in Asia, environmental resources are scarce and under intense stress from the growing population and consumption rates. Unless resources are managed efficiently, it will be difficult to meet the increasing demands placed on them in future. During the Final Conference on ecoBudget–Asia, several Indian cities have acknowledged the problem of environmental management faced by the Urban Local Bodies, and from the experience of Guntur, ecoBudget can be identified as a suitable and efficient management tool that can be easily replicated in different cities according to their needs.

I hope the wider acceptance and application of ecoBudget in Asian cities will usher in an era of sustainability much called for by the exigencies of the modern world today!
ecoBudget is ready to be rolled out in municipalities globally. Local governments worldwide are encouraged to introduce environmental budgeting as a standard process for the annual planning and managing natural resources, in the same way they regularly perform financial budgeting and management.

ecoBudget has been developed through co-operation of experts and practitioners in a series of pilot projects. The ecoBudget Asia project has demonstrated that the system works well in Indian and Philippines municipalities. We thank the European Commission for having enabled us to gain this experience. ecoBudget has proven to function in a variety of political and administrative environments.

We at ICLEI are happy that ecoBudget finds support from the United Nations Environment Program (UNEP) and Human Settlements Programme (UN-Habitat), and that it has been endorsed by the World Assembly of United Cities and Local Governments (UCLG). I am happy to declare it released for worldwide application.
Introduction: Need and Use of Guide

This guide is not a theoretical one. This guide is not based on assumptions. This guide follows directly from the findings of the project “ecoBUDGET – Asia”, which took place during the three years 2005-2007. The project has been funded by EU’s ASIA-URBS programme and run by the Municipality of Bologna in Italy (as project co-ordinator), Växjö Municipality in Sweden, Guntur Municipal Corporation in India and the Province of Bohol in the Philippines through the pilot municipality of Tubigon, with the technical support of ICLEI - Local Governments for Sustainability.

It aimed to transfer the knowledge and experience of the environmental management system ecoBUDGET in European cities with their Asian counterparts.

ecoBUDGET itself is an environmental management system developed by ICLEI for implementation at local government level. By aiming at this target group, whole territories and communities can be addressed, rather than individual entities.

To complement the arena in which it is applied, ecoBUDGET adopts the routines and terminology of financial budgeting, without assigning a monetary value to the environment. Efficiency gains are measured instead by physical indicators, which are chosen to reflect the situation of the individual municipality.
Environmental Budgeting for Developing Countries

“Limits to Growth” (the study by the Club of Rome in 1960’s) brought forward the serious consequences of unconcerned economic growth, consuming vital environmental resources which will lead to unsustainable development and an eventual lowering of the standard of living. The 1972 UN Conference in Stockholm on Environment voiced the same concern. However, it was in 1992, at Rio de Janeiro that the world came together to conserve the environmental resources of the globe as the only way to have sustainable economic development. The global community realised that the impact of degraded environment does not recognise national boundaries, nor discriminate between the rich and the poor, the ‘haves’ and ‘have-nots’, nor colour, creed or religion. The future of the globe depends on the common commitment and working together towards the goal of sustainable development.

The developing countries of the world are beset with challenges of unemployment, inadequate access to resources, shelter, nutrition and basic services, poverty and poor economic growth. On the other hand in some regions (e.g. Asia) the situation is very diverse and some developing countries have high growth rates. Inadequate access to services and development has dire impacts on the environment, while ill considered paths to growth may also result in serious environmental consequences. There is considerable overlap between economic and environmental concerns. The Rio conference emphasised that achieving sustainable development is at the heart of the process of economic development. The Local Governments are at the key
2.1 Local Agenda 21

Agenda 21, the global agenda for sustainable development in the 21st century was signed by all nations of the world. In this declaration, nations of the world have committed themselves to carry out programmes for development consistent with achieving sustainable development. The Agenda 21 states that “participation and co-operation of local authorities will be determining factor in fulfilling its objectives.” “As the level of governance closest to people, they play a vital role in educating, mobilising and responding to the public to promote sustainable development.” Each local authority should adopt “a Local Agenda 21”.

It helps to secure the future through community development.

It promotes achievement of budgetary efficiency by setting budgetary limits and establishing benchmark for local government efficiency.
It helps in conserving and protecting community assets and allows greater participation in decision making and implementation.

2.2 United Nations Millennium Development Goals

In 2000, 189 nations of the world signed the United Nations Millennium Declaration. The Millennium Development Goals (MDG) were formulated, most of which are targeted to be achieved by 2015. The MDG comprise a set of 8 goals, which have been further expanded to 18 targets. It has also prescribed indicators for monitoring progress (please see annexe for details.). Perusal of the goals and targets shows that all of the goals and targets relate to the functions of the local authorities. However, the priority may vary due to local conditions.

“The global fight against poverty and hunger – encapsulated in the MDGs is heavily dependent on how cities perform. The MDG Progress Report in 2006 states that in the last five years some progress has been made, while there is still a lot to be done. The report highlights the following challenges for developing countries:

- Poverty rates have dropped marginally, but the number of people living in extreme poverty increased by 140 million;
- Universal primary education is in sight, yet developing countries lag behind;
- More children are surviving their first years of life, but sub-Sahara Africa trails far behind;
- The maternal mortality rate remains high;
- Despite some gains to combat HIV/AIDS, the epidemic remains centred here with the highest concentration of infected people;
- Per capita CO$_2$ emissions have remained fairly constant between 1990 and 2003, but due to economic and population growth the overall CO$_2$ emissions continue to rise, especially in the developing world;
If the arena for accelerated implementation and performance to meet MDG targets is indeed set in the cities of the developing world, tools, techniques and approaches that are suitable to local governments need to be rolled out, adopted and used to identify, plan, implement, manage, motivate and sustain such MDG programmes.

The prefix ‘eco’ in the term ecoBudget may suggest that the tool is designed to manage only the ‘green’ or ecological agendas of cities. Humans are an integral part of the natural system. Unsustainable patterns of production and consumption, i.e. both under production or consumption and wasteful consumption and production patterns have far reaching implications for a sustainable natural system. Socio-economic development or under-development issues are in most cases an integral part of the ‘green’ agenda of developing countries. Addressing MDG style socio-economic and development based issues are therefore readily integrated with the classical ‘green’ agenda in tools such as ecoBudget.

2.3 Environmental Management and Governance

Environmental management and governance at the city level are fundamentally complex processes. Complexity, and lack of capacity often inhibit the formal adoption, design, implementation and maintenance of environmental or sustainability programmes. Local authorities need a simple, yet logical and familiar tool and approach to direct and drive environmental or sustainability programmes. ecoBudget is just that, it is:

- simple when compared to more complex tools that require extensive document wars to implement;
- logical as it is based on the classical plan, do check, improvement and reporting loops that underpin most management models;
- familiar, as the process, approach and terminologies mimic financial budget and management processes that are entrenched practices in many city administrations, and
- flexible, as it is process based, allowing city administrations
Poverties are the main category that have more consequence of the environmental degradation and resource depletion. The poor are unable to meet basic needs (food, health care, shelter and educational).

The poor:

- heavily depend on eco-system services.
- are more likely to suffer from negative impacts of degradation
- well-being is linked to services from eco-systems*
Former UN Secretary Kofi Annan in his report to the Heads of States and Government in September 2005, ‘In larger freedom’, is addressing the need to shift towards a more efficient use of environmental resources in light of poverty: “We fundamentally depend on natural systems and resources for our existence and development. Our efforts to defeat poverty and pursue sustainable development will be in vain if environmental degradation and natural resource depletion continue unabated. At the country level, national strategies must include investments in improved environmental management and make the structural changes required for environmental sustainability.” This links the Millennium Development Goals 1, Eradicate extreme poverty and hunger‘ and 7, Ensure environmental sustainability‘ indispensably.

Eco-efficient Cities therefore need to properly value and protect services from eco-systems to alleviate poverty and hunger. However, changing consumption patterns will require a multipronged strategy focusing on

- demand,
- meeting the basic needs of the poor, and
- reducing wastage and the use of finite resources.
“As we can manage artificial resources - money - in term of budget, why shouldn’t we do the same with natural resources?”

This question is the backbone of ecoBudget, the environmental management system developed with local governments in mind. Based on the physical description of use and consumption of natural resources within the municipal territory, ecoBudget allows local governments to present tangible achievements of their sustainability oriented polices to the greater public.

Without assigning monetary value to the environment, ecoBudget applies principles and routines of financial budgeting to the management of natural resources.

Unlike other environmental management systems, ecoBudget is concerned with the management of natural resources within the municipal territory and community as a whole.

ecoBudget is unique in its requirement that quantitative long-term and annual targets must be ratified by the city council. Therefore it influences the direction of local environment policies. The ecoBudget is a process, which enables local self-governments to achieve the global targets of sustainable development. The ecoBudget principles not only allows establishment of inter se priority due to local condition, it promotes sustainable planning and projectisation.
The ecoBUDGET concept allows integration of environmental budgeting into the management process and the fiscal budget, to achieve the tasks set by the Local Agenda 21. It is based on three fundamental principles:

- It is formulated on the principles and procedures of financial budgeting
- It comprises of a full management cycle of planning to realisation
- It accepts sustainable development as a guiding goal, i.e. targets and actions strive for local sustainability.

The local authorities are ideally placed to achieve this integration. This environmental budgeting system allows management of natural resources as economically as the artificial resource “money”. Following are the areas of concern, which constitute the main pillars of ecoBUDGET.

- Resource management: conserving the natural resources and optimisation of their consumption, such as, land, air, water, flora, fauna of an area are vital to achieving sustainable development.
- Political commitment: formulate and ratify the environment budget through formally convened meeting and recording the declaration.
- Technical instruments: Adopt the technical and political instruments available for conserving ecological system through managing the urban development. Various processes as applicable to a local situation, such as, environmental planning, regulatory, economic, and communications instruments, taxes and fees, etc and also mechanisms for awareness raising including public participation etc, may be adopted.

### 3.2 Practical Applications of ecoBUDGET so Far

ecoBUDGET began life as ökoBUDGET in four German local authorities back in 1996. Dresden, Nordhausen, Bielefeld and Heidelberg were the pioneering cities
of this environmental budgeting system, uniquely designed for implementation in local governments.

This initial endeavour came to an end in 2000, but was followed quickly by the introduction of the system in Kaiserslautern, Germany, which marked the second stage of ecoBUDGET implementation and development in Germany.

Encouraged by successes achieved to this point, the European ecoBUDGET was conceived and in 2003 initiated. Six cities from across Europe - Växjö, Amaroussion, Bologna, Ferrara, Kalithea and Lewes, assisted by experienced ecobudgeteers; Heidelberg and Dresden, embarked on the application of the system to their individual situations. Ending in 2004, the results were, once again, resounding successes.

Yet ICLEI and her partners seemed determined to push the boundaries of ecoBUDGET even further and in 2005, launched ecoBUDGET-Asia, which saw two Asian local governments, Guntur, India & Bohol, Philippines, take up the challenge of implementing environmental budgeting in their local government structures. In this particular chapter of the ecoBUDGET story, Bologna and Växjö have offered their expertise and support and are working closely with their Asian partners.

### 3.3 Why ecoBUDGET in Developing Countries

All development causes environmental impact, transient or permanent, short term or long term, retrievable or irretrievable. It is imperative that local authorities assess the impact of development on environmental resources. For example, providing potable water supply is a municipal responsibility. However, unless the source is conserved, it may dry up or become polluted and cease to be a source. Similarly collection and disposal of garbage is a municipal responsibility and it costs money. It could be made cost effective and environment friendly, while improving the delivery of the service. There are several such areas of concern, which can be adapted to suit local concern and priority.

The purpose of ecoBUDGET is to select appropriate set of measures, indicators to evaluate performance, set targets for achievements in a phased manner, work out the cost of the measures, and how the municipality can achieve these goals. Experience of the municipalities, who have adopted ecoBUDGET, shows that they profit by environment friendly measures even in short frame of time.
ecoBudget: What to do!

The aim of this chapter is to support everyone involved in implementing the ecoBudget process at the local level in the local authority. The guide can be followed step-by-step by a specific “ecoBudget team” appointed by the Municipal Council to coordinate the complete series of activities, but also by other actors involved in the implementation of a local ecoBudget (be they politicians, administrators, employees or stakeholders) who seek assistance in one or more of the phases of an ecoBudget cycle.

This chapter follows, step-by-step and in a detailed way, the five stages that together comprise an ecoBudget cycle. Each paragraph represents an ecoBudget step and presents the main activities to be undertaken by the different actors involved, so as to comply with the step’s requirements.

Two things must be considered. 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, Municipal, Province, County or even Region 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 a lot according to the local context.
Please remember that...

...at wide level it is very complex to identify and then to generalise the different local actors with different roles in ecoBUDGET, since the legislation is very diverse from country to country. However in very general terms, it is possible to identify the following categories:

- **Political executive body** is composed of the governing politicians, namely the Mayor and the other politicians appointed or elected to a specific department (often referred to as deputy Mayors). They represent the head of the executive part of a local government.

- **Political representative body** is primarily the City Council members (municipal, provincial, county, etc...), i.e. the elected representatives of the citizens. They are directly involved in the approval of ecoBUDGET’s decisive steps. Politicians are also the members of the local parties, which can be involved in different stages of the system.

- **Administrative body** refers to those employees of the administration involved in the ecoBUDGET procedure with a certain degree of responsibility (managers, departments heads, experts, etc...). 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. Obviously, the contribution of these actors to ecoBUDGET can be commissioned by a Local Agenda 21.
Below you can see the simple representation of *ecoBUDGET* cycle.

![ecoBUDGET cycle diagram]

**Figure 2: The ecoBUDGET cycle.**

Overlapping phases

*ecoBUDGET* is an annual cycle. A more exact formulation would specify that *ecoBUDGET* is a cycle with an annual reoccurrence. Depending on availability of data and information, subsequent *ecoBUDGET* cycles overlap in part. This means that the planning phase of the subsequent year’s budget overlaps 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 and mirrors the analogue situation in the classical financial budget. The figure below visualises this concept. It refers to an *ecoBUDGET* procedure aimed at approval 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 both at gradual or prompt rates (e.g. oil spill of great magnitude). 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.

4.1 Step 1: Pre-Budget Review

The first step, particularly important in the first cycle, is to assign roles and responsibilities, to establish the participatory degree of the process, to draft a time schedule of activities, to review the state of the environment, the interactions with legal frameworks, existing instruments and environmental impacts. Setting the priorities is fundamental to proceed to the second step.
4.1.1 The inaugural vote of the council

Who starts? At the outset of ecoBUDGET it is important that the 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 council. 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, without discussing indicators, targets, and measures in details. It may be an idea to first introduce the system 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.

Please remember that...

...in the first year this step is particularly relevant and necessarily different from the following years. Some slots - like the inaugural vote of the council - happen only the first year. Others happen only as ‘review’ from the second cycle onwards. Clarifying and accomplishing these prerequisites involves a “one-off” effort at the beginning of ecoBUDGET introduction. 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.

4.1.2 Setting up ecoBUDGET team

Good idea! Tubigon’s double team

The Municipality of Tubigon has decided to build up a Co-ordination Team and an Implementation Board. The first is formed by just two people and deals with dealing with communication, harmonisation and administrative aspects; the latter, formed by high-ranked managers from different department and the Mayor settle the important strategic decisions for the whole system. The role of the ‘secretariat’ is given to Municipal Planning and Development Office (MPDO).

Often, there will be an initiator of ecoBUDGET 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 ecoBUDGET within the local government in question. The ecoBUDGET Team is the central agency responsible for drawing up and following up on the implementation of the system.
The lead may be given to an office specially created for the task or to an existing department, but in the latter case the team should be formed also by people of other departments. 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 Team 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 highest managing authority of the administration, be it the mayor, the commissioner (in India and Commonwealth countries) or the chief of administration.

4.1.3 The preliminary analysis or statement of environmental assets

dCOBUDGt adopts the function of the preliminary report - derived from financial budgeting - and slightly extends its use. Information collected for the baseline reports can be used by the different 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 baseline 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 dCOBUDGt 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, as a regular inclusion to the environmental budget, when the latter is presented to the council. The preliminary analysis will be summarised in a simple table defined as statement of environmental assets. It is formed by:

- 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.
- Current values of environmental consumption and values of the previous annual balance (previous year’s values) within the area of the
local authority (e.g. through planned projects).

- Values and information pertaining to the current environmental budget year (if an intermediate report is available).

- External trends that influence the locality.

- The local authority's general future development, using population figures, economic and social parameters, and other relevant statements.

- Report on existing management instruments (e.g. ISO 14000) already adopted in the local authority.

An important feature is that “assets” indicators are normally directly related to the resources identified during the ecoBUDGET preparation process (see step 2). 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. All information from the departments, the finance office, the senior management and the Agenda 21 Forum, other administrative levels, including villages, local organised communities, or from individual, external actors, is assessed and summarised by the ecoBUDGET Team.

It is evident that after the first cycle the pre-budget review becomes simpler, since most part of this document do not need to be re-written during the following cycles. Nevertheless it is important to have a review of this slot at the beginning of each cycle.

**Tip: Use a checklist!**

In order not to get lost with the variety of issues to be included in the pre-budget review it might be advisable to use a check-list like the following:

- Did you define the boundaries?
- Did you select the themes?
- Did you consider the legislative context?
- What is your current status?
- How to measure it?
The core of ecoBUDGET. A stakeholder-based process *issues-resources-indicators-targets* defines the main documents of ecoBUDGET, the master budget and the sustainability analysis. The process prioritises sustainability policies. They are described by a concise set of understandable indicators, each of them related to quantitative long- and short-term targets. These documents represent the goals of the local government, which will be subjected to the city council approval in the next step.

**Example: From Issues to Targets in Guntur**

In Guntur five environmental issues were chosen to be implemented as part of master budget implementation, including:

1. **Water Quality**: increase in the number of parameters monitored and frequency of monitoring

2. **Water Quantity**: monitoring the loss of water in the pipelines and increased supply of potable water

3. **Waste Management**: monitoring of waste collection (% of citizens served)

4. **Green city**: increase in surface of green area

5. **Air quality**: assignment of hawkers ID and providing places to hawkers and monitoring of Suspended Particulate Matter

For each of these issues chosen, the GMC chalked out indicators and set short term and long term targets for themselves on the basis of the current or baseline value of the indicators. In the ecoBUDGET programme in Guntur, although ambitious targets were set for each of the resources identified, pragmatic indicators were chosen for them. All the resources selected for the programme responds to the basic needs of the population of the city. As a result, not only was there a strong political involvement, there was also common people’s participation in implementation, which resulted in the high success rate of the programme.
4.2.1 The Master Budget: core of ecoBudget

The Master Budget is ecoBudget crucial overall planning and steering element. As is the case with the financial budget, it must be approved by the council every year, concluding the planning phase of the ecoBudget cycle. In short it is a list of 5 to 15 indicators, describing the utilisation and consumption of several natural resources; each indicator presents figures for base year, previous year, short-term targets (annual) and long-term targets (10-20 years). Building the first Master Budget is a challenging process in five slots: environmental issues - natural resources - indicators – long-term targets – short-term targets. From the second cycle onwards, only short-term targets have to be set, while the first four being already given.

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 forums are suitable for finding agreement on the identification of main problems (i.e., environmental issues) and related resources. Thus, it is efficient and therefore recommended to perform target setting as a participatory process. The role of experts will be especially required for the selection of appropriate identification and target proposals.

From environmental issues to resources: building the Master Budget:

The ecoBudget 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 ecoBudget environmental resources are, in the widest sense, elements or components of the ecosystems (global 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.
The table shows examples of how scarce natural resources can be derived from actual environmental issues. The use of these resources for *ecoBUDGET* can be maintained within set limits by including and managing them in the environmental budget. Once a set of resources, i.e. the structure for the environmental master budget, has been established, the *ecoBUDGET* Team starts the process of indicator selection.

Earth’s atmosphere, upon which the stability of the global climate depends. Generally spoken, in *ecoBUDGET* environmental resources are, in the widest sense,
elements or components of the ecosystems (global 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.

**From environmental resources to indicators: Drawing-up the Master Budget**

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 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 tedious list, both citizens and politicians (i.e., all non-experts) will find linking the administration's goals and policies easier.

**Finalising the Master Budget: From indicators to long-term targets**

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 15 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. In certain cases, the resources are not consumption based and measurements may be qualitative as well.
Please remember that...
...a good ecoBudget indicator should have the following characteristics:

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. Please, be **clear**!

2. **Availability of data (updated with appropriate frequency)**: This is maybe the most important pre-requisite for the implementation of ecoBudget in developing countries. 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. Please, be **practical**!

3. **Predictability (indicator usable for identifying trends)**: In order to make estimates for the draft budget, it is helpful if the technical departments have experience in handling the selected indicators. Please, be **foresighted**!

4. **Comprehensibility (indicator understandable by non-experts)**: Indicators and their corresponding data must be comprehensive and available at any time in order to satisfy requests for information from third parties who were not involved in their selection and definition. Please, be **transparent**!

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. Please, be **complete**!

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. Please be **short**!
In some developing countries, particularly in Asia, developing long-term targets can be particularly difficult because of the demographic boom (especially in the cities) and of the steep economic growth. For this reason a detailed and accurate baseline report is vital to this point.

An important element of discussion (and very often of conflict between experts 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 ecoBudget Team’s responsibility (and eventually of the city council’s) to find the right equilibrium between reliability and ambition for their proposed targets.

**Completing the Master Budget - From long-term to short-term targets**

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 planning phase. They are established year after year for each indicator. Before setting the short-term targets for the following budget year, it is necessary to take into account

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**Tip: Good Ways to Select a Target**

There is not just a single way to establish a long-term target, but mostly a combination of several paths, namely:

- Complying with national law. In case an indicator is below national standards required.
- International agreements or protocols. In absence of national laws or guidelines, a city might give its contribution to global environment through adoption of international standards.
- National or international campaigns. Targets might be derived from projects or initiatives the city participates in.
- Scientific or political advice. In all other cases, especially when other conditions are missing. In this case adoption of existing targets of similar cities may help.
the previous year’s value or reference value to find orientation. Because of the phenomenon of overlapping cycles (see Chapter 3.0), this is usually the value of the previous year: if for example a city is, in autumn 2007, preparing the master budget 2008, the most recent reference value will probably be from 2006.

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

Generally speaking there are two ways to establish short-term targets on the basis of long-term targets. The first is a more analytical one, calculating and estimating each effect of possible measures and external trends: this way is rather complicated and sometimes requests deep analysis. The other way is more ‘arithmetical’ and just approaches the long-term target by successive more or less equal steps year after 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 table on the next page shows the Master Budget approved in Tubigon, in the year 2006.

4.2.2 The sustainability analysis

The sustainability 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 sustainability analysis indicators appears different and more independent from the master budget. 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 master budget) allows for a debate on areas of human needs (according to the different 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.
### Example: Master Budget in Tubigon

The table shows the master budget approved in Tubigon on 23rd of December 2005

<table>
<thead>
<tr>
<th>Resource</th>
<th>Indicator</th>
<th>Unit of Measure</th>
<th>Current Value</th>
<th>Baseline Value</th>
<th>Short Term Target (2006)</th>
<th>Long Term Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Turbidity / Concentration of Suspended Solids</td>
<td>PPM</td>
<td>0</td>
<td>0 (2004)</td>
<td>50</td>
<td>100 (2015)</td>
</tr>
<tr>
<td></td>
<td>Non-Revenue Water (Systems Loss)</td>
<td>%</td>
<td>?</td>
<td>?</td>
<td>35</td>
<td>20</td>
</tr>
<tr>
<td>Timber/ Fruit Tree</td>
<td>New Trees Planted</td>
<td>#</td>
<td>0</td>
<td>0 (2004)</td>
<td>4.000</td>
<td>20,000 (2015)</td>
</tr>
<tr>
<td>Timber/ Fruit Trees</td>
<td>Increase in Area Covered</td>
<td>HA</td>
<td>0</td>
<td>?</td>
<td>50</td>
<td>500 (2015)</td>
</tr>
<tr>
<td></td>
<td>Survival Rate</td>
<td>%</td>
<td>0</td>
<td>?</td>
<td>70</td>
<td>70 (2015)</td>
</tr>
<tr>
<td>Good Built Environment</td>
<td>Reduction in Residual Solid Waste in tonnes/m³</td>
<td>%</td>
<td>0</td>
<td>0 (2004)</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>HHs Practicing Segregation</td>
<td>#</td>
<td>0</td>
<td>0 (2004)</td>
<td>15</td>
<td>90</td>
</tr>
</tbody>
</table>
On the local authority level, practical efficiency or performance indicators need to be found. One way of expressing these is by percentage ratios of resource-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 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. 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. 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 sustainability analysis indicators are therefore cross-sectoral.

Finally it has to be added, that compared to European situation, in developing countries, the border between ‘environmental’, ‘social’ and ‘economic’ is less sharp than in Europe, therefore it could be possible that local authorities decide to include such indicators in the master budget as well.

4.3 Step 3 – Budget Approval

Through a council decision, the targets of the master budget are set into force. The master budget is drafted, debated, approved and presented to the public. The administration is ordered to implement the politically binding targets.

4.3.1 The Master Budget draft

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

4.3.2 Presentation to the council

If the political executive body has 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 approved. The explanatory report is 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.

Please remember that...

...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 ecoBudget Team 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.

Finally it is to be remembered that this ideally described procedure may have deviations depending on local legislation: for example in the Philippines, two levels of approval are required: first, at the Local Development Council; the second is at the legislative council, which is the final ratification and approval.
4.4.2 Step 4 – Budget Spending

The local government agrees on measures to achieve targets, monitors and accounts their effects and undertakes corrective activities in case of deviation. The plan of measures can be connected to the LA21 action plan. This step lasts normally the whole budget year.

4.4.1 Agree on measures and assign responsibilities

After targets are agreed it is necessary to establish for each indicator a series of measures (actions), in order to meet the targets. A measure can have impacts on different indicators.

These activities are best carried out by those responsible in the individual departments and then confirmed in a high-level round of talks between executives. The instruction to begin this step is approved by the ecoBudget 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 coming environmental budget year.

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. See the example in the next page.

In order to increase the ownership of the process of ecoBudget among the citizens and the civil society, it is essential to include local NGOs, individuals or other organisations who want to cooperate or collaborate.

4.4.2 Measures, existing activities and events

Another logical problem regarding measure-management refers to the simple fact that the local government does not have complete information on what happens within its territory. Moreover, since ecoBudget 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.
For this reason, it is recommended to analyse possible impacts on resource consumption and use, by means of:

1. **Measures**: decided by the city or other actors for meeting the *ecoBudget* targets, normally with a positive impact;

2. **Existing projects/activities**: already agreed plans and projects - often decided before the implementation of *ecoBudget* and with environmental impacts;

3. **Events**: mostly unexpected or at least unpredictable occurrences, which can have either positive or negative impacts on *ecoBudget* (like a natural event, the response of citizen to a particular project/plan, or a new plan decided on by a different authority).

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.

### 4.4.3 Monitoring and 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 approval of the master budget that establishes accounts for each indicator of the master budget. 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.

Accounts serve also as basis for the planning phase of the following cycle, since it starts before the final real values can be collected. Sound accounting is therefore strongly recommended.

- It is *ecoBudget* 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.

- It may be wise to apply a monitoring-record template, in order to keep
### Example: Measures and Responsibility in Tubigon

The table shows the list of measures and the corresponding responsibilities for a part of the master budget approved in Tubigon, in the year 2006.

<table>
<thead>
<tr>
<th>RESOURCE</th>
<th>INDICATOR</th>
<th>SHORT TERM ACTIONS</th>
<th>FREQUENCY OF MONITORING</th>
<th>MAIN RESPONSIBILITY DEPARTMENT(S) AND PERSONNEL (PLEASE ADD RELEVANT INFORMATION, NAMES, E-MAILS, ETC.)</th>
</tr>
</thead>
</table>
| Drinking Water | Sources Positive for Coliform (out of 12 sources) | - installation of chlorination units/system  
- technical training on water quality monitoring including procurement of portable water quality monitoring equipment  
- information drive on sanitation and environmental management awareness | monthly | Mun. Waterworks Department & Mun. Health Office  
Rolando Arcayos - WWS Superintendent  
Arsenio Ceniza - Mun. Sanitary Inspector  
- monthly monitoring of bacterial presence on all water sources  
- conduct and monitor chlorination on all water sources |
| | Turbidity / Concentration of Suspended Solids | - establish baseline data (national standard)  
- installation of filtration system | monthly | Mun. Waterworks Department  
Rolando Arcayos - WWS Superintendent  
- conduct monthly monitoring of water turbidity & suspended solids on all sources  
- plan for the installation of filtration units |
| Mangrove Forest | Area Covered / Reforested | - ID site for reforestation  
- coordinate with barangays leaders and validate ID area to be planted | monthly | Municipal Agricultural Office  
Yolanda Labella - MAO  
- coordinate with government agencies, NGOs, volunteer groups, academe, barangays leaders in conducting reforestation activities  
- initiate information drive on reforestation activities of LGU and ecoBUDGET |
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Short term actions</th>
<th>Frequency of monitoring</th>
<th>Main Responsibility - Department(s) and Personnel (Please add relevant information, names, e-mails, etc...)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Timber/ Fruit Tree</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| New Trees Planted                 | - procurement of planting materials  
- monitoring of number of new trees planted | monthly                 | Municipal Agricultural Office  
Yolanda Labella - MAO  
- monitor number of trees planted by different sectors  
- monitor establishment of local tree nurseries in the barangays |
| Increase in Area Covered          | - monitoring of # of new trees planted                                             | monthly                 | Municipal Agricultural Office  
Yolanda Labella - MAO  
- monitor number of trees planted by different sectors  
- monitor establishment of local tree nurseries in the barangays |
| Established MPA’s                 | - site ID  
- formation of MPA management council  
- passing and ratifying of ordinance                                                  | monthly                 | Municipal Agricultural Office  
Victor Boligao  
Fishery Technician/ CRM officer  
- monitor the number of MPAs established  
- co-ordinate with the organization which have management responsibilities of newly established MPAs |
| Coral & Seagrass Cover            | - monitoring of physical status of MPA                                              | semestral               | Municipal Agricultural Office  
Victor Boligao  
Fishery Technician/ CRM officer  
- monitor the physical status of MPAs  
- co-ordinate with the organization which have management responsibilities of newly established MPAs |
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.

**Example: Accounting in Guntur**

*The table shows the accounting reports for a part of the Master Budget approved in Guntur, in the year 2006.*

<table>
<thead>
<tr>
<th>Resources (related to issues)</th>
<th>Indicator</th>
<th>Current value</th>
<th>Short term target value 2006</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; Account March 2006</th>
<th>2&lt;sup&gt;nd&lt;/sup&gt; Account June 2006</th>
<th>3&lt;sup&gt;rd&lt;/sup&gt; Account Sept. 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Quality</td>
<td>Monitoring of the quality (number of parameters monitored)</td>
<td>1 (Only Residual Chlorine)</td>
<td>14 (with indicative figure)</td>
<td>3</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Green city</td>
<td>Surface of green area (m&lt;sup&gt;2&lt;/sup&gt; per 1000 inhabitants)</td>
<td>78</td>
<td>100</td>
<td>78</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>Air quality</td>
<td>Assignment of hawkers’ ID (number). Currently the number of identified hawkers is 1724</td>
<td>450</td>
<td>650</td>
<td>480</td>
<td>590</td>
<td>630</td>
</tr>
</tbody>
</table>

**4.4.4 Corrective measures**

In case of large deviations from the attainment of targets (see in the table above, the case of surface of green area) the local administration should try to agree on corrective actions during the budget year. This corresponds to the supplementary
budget in financial budgeting. 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.

4.5 **Step 5 – Budget Balancing**

The outcomes of the local environmental performances are presented as balance budget report including simple tables. Politicians and citizens easily assess the attainment of annual targets and the distance to long-term targets. Through an internal or peer-to-peer audit, process and outcomes are assessed against qualitative and quantitative criteria. The council ratifies the budget balance. The public is informed on the results of local environmental policies. Outcomes inform the next cycles.

4.5.1 **Balancing the accounts: preparing the budget balance**

Ideally, the budget balance of a certain period would inform the budget preparation of the subsequent one but this does not happen, since final values are normally ready when the next cycle has already begun. 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 3.4).

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 ecoBUDGET cycle. It is presented as a table to be published at various levels in the community.

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

1. The balance (or real) 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 long-term-target-attainment 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 point. It is easily calculated by the formula

\[
\text{Target-attainment index} = \frac{\text{Base value} - \text{Balance value}}{\text{Base value} - \text{Target value}} \times 100\%
\]

4. A graphic evaluation of the distance-to-target, i.e. the performance against the long-term target. (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 is presented.

### 4.5.2 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 ecoBUDGET 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?

**Please remember that...**

In the developing countries so far auditing procedures and figures of auditors are not very familiar in the public administration. For this reason, at least in the first 2-3 years of adoption, it may be advisable to base the internal evaluation more on peer-to-peer support, with the help of cities which have already implemented ecoBUDGET.

### 4.5.3 The balance report

The budget balance should be 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. 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 main part of the report should provide a brief explanation of the figures and results of the individual elements of the environmental budget balance. 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 forms 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.

### 4.5.4 The budget balance approval

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 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’.

The revised environmental budget report is agreed upon by the ecoBUDGET Team and executive body, 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.

The approval 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.

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.
Appendix: Case Study of *ecoBudget* Implementation in Guntur

5.1 Abstract

The concept of *ecoBudget*, fostered by the Aalborg Charter, 1994 has been introduced for the first time in South Asia through the city of Guntur in India. The project commenced in 2005 and the first *ecoBudget* of Guntur was ratified by the Guntur Municipal Corporation in March 2006. Five environmental issues were chosen to be implemented as part of master budget implementation, including, Water Quality, Water Quantity, Waste Management, Green city and Air Quality. The GMC chalked out indicators, set short term and long term targets on the basis of the baseline value of the indicators, and implemented various measures to achieve these targets.

The *ecoBudget* has been quite successfully implemented in Guntur with a high rate of success. The Municipal Corporation has taken measures and has improved the water quality and the quantity of water supplied to the city, increased the percentage of waste collection and segregation in the city, significantly increased the green cover in the city, issued identity cards to a large number of hawkers and assigned them places in the city. In the process of implementation of the budget, the Municipal Corporation has also identified certain obstacles such as lack of financial resources and lack of coordination among different in the way of achievement of the targets, so as to take action to overcome them.

Municipal Profile
Population: 514,000 as per 2001 census
Land Area: 48.50 square kilometers
Case

The Guntur Municipal Council was constituted in 1887 and was upgraded to a Municipal Corporation in the year 1994. Guntur City is the district headquarters of Guntur district of Andhra Pradesh State located in southern part of India. It is located 272 km southeast of Hyderabad.

The city is an important commercial and trading center for agricultural produce like chillies, onions, coriander, turmeric, cereals etc. But the most important agricultural produce traded at Guntur is tobacco, which is an important foreign exchange earner for the country. Guntur is also a cultural and educational center, famous for old churches, professional colleges and other higher educational institutions.

Guntur Municipal Corporation (GMC) is focused on making Guntur a city with all modern amenities for its citizens. Some of the roads and the solid waste-handling program are praiseworthy achievements as compared to many other Indian cities of similar size. Guntur also has an underground drainage system and a reasonably effective drinking water distribution network. The city has also come up with several urban innovations such as:

- Round the clock public grievance cell.
- Computerized birth and death records.
- Corporation has formulated a citizens charter specifying time to redress various civic problems.
- Area-wise details of property tax are displayed to increase transparency.
- Display of clearance timing on the dustbins for improving waste collection.

The ecoBUDGET program adopted by the GMC provided an opportunity to manage its environmental and natural resources in a manner consistent with its ideas of development for the city while maintaining the sustainability of the resources themselves. The process gave a political mandate to activities undertaken for environmental sustainability and increased awareness among politicians, administrators as well as citizens regarding sustainable development.
Appendix: Case Study of ecoBUDGET Implementation in Guntur

The ecoBUDGET Asia project was commenced on December 2004. On 4th March 2006 in its council meeting, GMC ratified the ecoBUDGET Master Budget for 2006-07. Five environmental issues were chosen to be implemented as part of master budget implementation, including:

1. Water Quality: increase in the number of parameters monitored and frequency of monitoring

2. Water Quantity: monitoring the loss of water in the pipelines and increased supply of potable water

3. Waste Management: monitoring of waste collection (% of citizens served)

4. Green City: increase in surface of green area

5. Air quality: assignment of hawkers ID and providing places to hawkers and monitoring of Suspended Particulate Matter

For each of these issues chosen, the GMC chalked out indicators and set short term and long term targets for themselves on the basis of the current or baseline value of the indicators. Each activity was reported and monitored. From September 2006, GMC started implementing the above master budget. The project was divided into five phases: 1) Training on ecoBUDGET and planning the overall project 2) Master Budget preparation 3) Implementation of the budget after approval from council 4) Monitoring, controlling and reporting 5) Evaluation and assessment of local reports to adjust ecoBUDGET for an Asia-wide application.

5.3 The Target Groups and Beneficiaries in the City:

- Local administration (local bodies and other developmental agencies) who will be responsible for the implementation of ecoBUDGET. The project was aimed to help them to:

  - Pilot new approach to environmental management, learn about instruments and management practices from European partners;
Better planning and implementation of developmental projects;

Increased accountability and transparency in decision-making.

Local politicians who will be responsible for the preparation and approval of *ecoBudget*. The project was aimed to provide them with:

- Information on the status of the environment and the needs of the city;
- Better understanding of the importance of natural resource management;
- Support to priority setting and the actions of local bodies.

Citizens and NGOs, who will participate in preparation, identification of priority issues, environmental indicators and targets to be used for *ecoBudget* implementation of Action Plan. The project provided them with:

- Information on the status of the environment and the needs of the city;
- Better understanding of the importance of natural resource management;
- Support to the actions of local bodies;
- The raising of local awareness.

The Pollution Control Department who will provide the technical input regarding the status of the environment, various environmental acts and regulations and development of environmental indicators and targets. The project was aimed to:

- Assist the execution of measures (in particular pollution control);
- Assist the implementation of the environmental acts and regulation by raising public awareness.
5.4 Results

**Water Quality**

Before the implementation of ecoBUDGET the GMC was monitoring only residual chlorine in the drinking water supplied by it. However, water quality being one of the priority issues recognized by the GMC for improvement through ecoBUDGET, the GMC decided to increase the number of parameters monitored by it to 14, including fecal coliform, fluoride, nitrate, chloride, hardness, and turbidity among others. In order to achieve this, 2 mobile water testing Jaltara kits (approved by UNICEF), were procured and tests were conducted by the GMC and the stakeholders committee to cross check the results. *The GMC is now able to conduct 2 analyses of 30 samples per day for 14 parameters.*

There is a water quality testing laboratory at Sangam Jaralla Mudi and one mobile water testing laboratory which helps to monitor the major water quality parameters.

**Water Quantity**

The quantity of water supplied for drinking by the GMC, the regularity of water supply and the revenue generated has been increased substantially after the implementation of ecoBUDGET.

In order to quantify the amount of water being supplied to the city, flow meters are planned to be installed at the major water filling stations to record and monitor the amount of water flowing within the next year. These are proposed to be installed at Takkellapadu, Nehru Nagar and Sangam Jaralla Mudi. A system of spot billing has been introduced to avoid unnecessary delay and discrepancy in meter reading or disbursement of notices. GMC is the First Urban Local Body to introduce this system in Andhra Pradesh. This measure has significantly reduced the wastage of water.

Water tankers have been used to supply drinking water in the areas of the municipality, which are uncovered by piped water supply. *A computerized system was developed to monitor the water supplied through tankers*, by which a token was generated giving the gist of the trip each time the tanker took a trip. The recorded reports are placed in the Corporation website. *In the financial year 2006-07, Rs. 0.2 Millions has been generated as income, which is an increase of 10%.* The total quantity of drinking water supplied (daily) is 1,776,000 LPCD.
Structural improvements in the water supply system, such as replacement of existing RCC pipeline from Padmaja Petrol Station to Nehru Nagar with the new PSC pipeline of 1200 mm diameter for 1.2 km has already helped to reduce water pollution in the pipeline, prevent leakages, decrease turbidity and improve the quantity of water supply. A new filtration plant was under trial due to the renovation of the old plant to improve water purification, rectify waterbed problems, and improve chlorination process, pH reporting and alum mixing process. A new GRP (glass reinforcement plastic) pipeline at Takkellapadu Water Works, connecting from Krishna Canal to Takkellapadu New Filtration Plant with 900mm diameter has been proposed. Developmental activities have been undertaken at Guntur Channel so that raw water can be obtained throughout the year from the Krishna Canal. At present the total amount of water supplied to the city is 70MLD. The new pipelines and structural improvements will help to increase the water supply quantity from 70 MLD to 115 MLD, thereby assisting in the achievement of 24x7 water supply in the city, which is a long term target for the city.

At present 85% of the area is covered by piped water supply from 24 reservoirs, the rest of the 15% is supplied through tankers. Additional reservoirs have been planned in 4 more areas to increase coverage.

**Solid Waste Management**

GMC has initiated an action plan on Solid Waste Management to achieve ‘0’ garbage environment in a phased manner. The first phase involves improvement in the collection and transport system, including increase in number of vehicles and development of infrastructural facilities like acquiring new sites for dumping or vermi-composting. The second phase includes segregation of garbage by introducing two-bin system at the source and taking suitable measures to keep the garbage separate during transportation. Recycling is done for recyclable materials. The third phase is the generation of income from converting municipal solid waste into manure, recycling of waste, vermi-composting, or development of landfills.

A campaign was carried out by GMC to increase awareness on solid waste management and distribution of plastic bins among the public. After the implementation of the ecoBUDGET programme, there has been a proven increase in the collection and segregation of waste, with 60% garbage collection and 70% garbage segregation in the city.

The existing structure for solid waste management in the city includes the vehicles for collection of waste and the dumping of waste in two private quarry pits with consent of the owner. The vehicles available include tractors, tippers, dumper
placers, tractors mounted bull, dumper bins, RCC garbage bins and wheel barrows. 350 metric tonnes of waste is generated every day to be dumped or disposed off. There has been significant increase in the segregating facility.

A Short Term Action Plan for 1 to 2 years has been formulated for solid waste management. This includes increase in the area where the two bin system is followed, increase in the number of vehicles for collection of waste from households, construction of two vermi compost yards (work has already commenced), and identification of three transit dumping sites for non-biodegradable wastes. As a Medium Term Action Plan of 2-5 years, the government has approved the acquisition of 1000 acres of land belonging partly to Zilla Parishad and partly to Railway Department for the dumping of solid wastes.

Lack of resources and space for disposal of solid wastes have been a major hurdle in the achievement of 100% waste disposal in the city. Lack of awareness among citizens is the major obstacle in achievement of 100% segregation of waste. Moreover, segregated waste is not used in any way. The Municipality is however looking for further opportunities to utilize segregated waste such as vermi-composting and pelletisation.

Green Area

According to the budget, the green area per 1000 persons was to be increased to 100m² from existing area of 78 m².

GMC has taken up massive developmental activities for beautification of the city through development of greenery and tree plantation. Almost 1 lakh saplings have been planted in various parts of the city. Taking a 10% survival and an area of 0.5 m² per sapling, 5000 m² of area is now covered under a green cover only due to the saplings. Apart from the saplings, green avenues have been created for an area of 1400 m². Although it has not been possible to achieve 100 m² of green area for 1000 inhabitants, the city has 89.6 m² of green area for every 1000 inhabitants.
The GMC has also taken up renovation of existing parks, stadium, walking tracks and GMC office places with an area of 1750 sq. mt. with greenery (carpet grass turfing). Six places with an area of 2580 sq. mt. of open spaces will also be turned into green patches (carpet grass turfing) in the near future. GMC has also planned development of 15 road dividers with greenery for a length of 12 km. In order to achieve the targets for increase in green area cover, nine areas (green spots) have been identified for Smruti Vanams (resting / relaxing points) under joint venture of GMC and APUSP at a cost of Rs. 2 million (ca. 35,000 Euros). Smruti Vanams have been proposed at Udyog Nagar in Palakalur Road, Santhi Nagar and Muthyalareddy Nagar, Navabharath Nagar, RTC Colony, Srikanth Nagar, Stambalagaruvu, Lakshmi Nagar Main Road beside HLR, IPD Colony 8th Line and at Koritepadu Triangle. Proposals have also been made to developing an area of 6 acres of open land as park play ground, at Konda Venkatappiah colony, and of Gurjanagulla Tank Bund and Koritipadu Tank Bund.

### Air Quality

The different indicators for air quality improvement in the city included monitoring of suspended particulate matter and regularization of hawkers to avoid traffic congestion in roads. For regular traffic improvement GMC, with the coordination of Police department and Traffic advisory committee, implemented some developmental activities like identification of parking places, removal of unauthorized cellar constructions in areas marked for parking purpose, maintaining regular co-ordination with Pollution Control Board for monitoring air quality and concentrating on traffic regulation and developing of junction improvements.

The GMC has completed the survey and identification of 1732 hawkers in the city. Only 450 of them had identity cards initially. With the implementation of the budget, **1395 have been issued identity cards** at present. Vending zones have been marked out to provide spaces for the hawkers. The city has been demarcated into 500 Green Vending Zones, 10 Amber Vending Zones and 12 Red Vending Zones. **950 hawkers have been allotted spaces** in green and amber zones, whereas the rest can roam around the city to sell their wares.

### Lessons Learned

The implementation of the *ecoBudget* program in Guntur has resulted in the incorporation of environmental concerns into the city’s administration process.
Since the budget has been ratified by the council, all decisions of the municipality have to take into account the environmental targets set by the budget, and take actions accordingly.

The ecoBUDGET programme was implemented in a place where no such system was previously existing. As such, it faced several challenges, the strongest being the challenge of getting people on board. Certain issues are not entirely handled by the Municipal Corporation and therefore it was difficult to successfully implement all actions to meet the targets. Moreover, the rapid urbanisation and development of the city makes it difficult to accurately calculate the improvements brought about by the programme. Coordination among different departments have been limited, thereby restricting the effectiveness of certain measures undertaken by the GMC to achieve targets. Lack of financial and infrastructural resources have also been a major constraint to the achievement of targets and there is need to identify resources for implementation of all measures and activities for the ecoBUDGET programme.

In spite of these challenges, the ecoBUDGET programme fairly successfully implemented in the city of Guntur and innovatively addressed problems of each of the resources identified. The programme also generated jobs in the process of implementation of various activities. In the ecoBUDGET programme in Guntur, although ambitious targets were set for each of the resources identified, pragmatic indicators were chosen for them. All the resources selected for the programme responds to the basic needs of the population of the city. Not only was there a strong political involvement, there was also common people’s participation in implementation which resulted in the high success rate of the programme.

5.6 Key Replication Aspects

The ecoBUDGET programme in Guntur is part of the ecoBUDGET Asia project funded by The European Union. The ecoBUDGET tool is flexible enough to be replicated in the municipalities of different cities according to their needs. This is evident from the fact that the tool initially designed for European cities has been quite successfully replicated in the Asian city of Guntur.

The crucial cause for the success of the ecoBUDGET programme in Guntur was the strong political commitment and the selection of issues which are of relevance to the people of the city. This increased the ownership of the programme among the city officials as well as the citizens, leading to greater public involvement and
better implementation of the project activities.

5.7 **Staff**

The staff involved in the programme included a programme coordinator and an assistant programme coordinator at the city level. However, the implementation of the activities involved the Local Implementation Team and a number of Municipal Corporation officials as well.
Appendix: Case Study of *ecoBUDGET* Implementation in Tubigon

6.1 *Program Goals*

Tubigon has experienced major threats to its natural resource base, such as indiscriminate use of fertilizers and pesticides, solid waste dumping (including toxic materials), shrinking agricultural lands because of population pressures, decreasing forest reserves due to illegal logging and forest fires, as well as coastal resource management issues. Tubigon decided to implement *ecoBUDGET* as a framework for local environmental management in order to enhance its environmental governance and management capacity, thereby improving its local environment and the living conditions in its communities. The municipality saw *ecoBUDGET*’s potential as a platform for linking its municipal vision, plans, strategy, resource allocation, and performance measures in order to promote sustainable development and alleviate poverty. Additionally, the municipality wanted to harmonize its different environmental management initiatives under one umbrella program and saw *ecoBUDGET* as a key step in that direction. The Province of Bohol intends to use the lessons learned from Tubigon’s experience with *ecoBUDGET* to implement the program in the 47 other communities in the province.

*Population (year):* 40,385 (2000)

*Land area (sq. km):* 82 sq. km.

*Overall municipal budget:* PHP 71,148,600 (USD 1,489,047) (2007)

“The municipality saw *ecoBUDGET*’s potential as a platform for linking its municipal vision, plans, strategy, resource allocation, and performance measures in order to promote sustainable development and alleviate poverty.”
Municipal Profile (Description):

The Municipality of Tubigon’s Municipal Council has eight elected members and two ex-officio members with the Vice-Mayor as the Presiding Officer. It approves the development agenda proposed by the municipality's executive branch in the form of policies and ordinances together with the annual budget.

In the Philippines, the Municipal Development Council (MDC) is a multi-sectoral council that initiates multi-sectoral development plans for the local government unit concerned. Tubigon’s MDC has 48 regular members including government representatives, elected officials, leaders of Tubigon’s 34 barangays (villages), and representatives of non-governmental organizations (NGOs), citizens’ organizations and civil society.

6.2 Summary

The Municipality of Tubigon began implementing ecoBUDGET in 2005 in order to tackle major threats to its environmental resources as well as quantify the impact of its existing environmental initiatives and make them easier to monitor and evaluate.

Through the work of a Local Implementing Team composed of municipal staff, Tubigon developed and adopted its first ecoBUDGET Master Budget in November 2005. The second Master Budget for Tubigon followed one year later, in December 2006. Citizen and stakeholder participation is an integral component of Tubigon’s policy implementation process, and is therefore a key part of its ecoBUDGET management system. The municipality and its citizens continue to work towards the short- and long-term targets set out in each annual Master Budget, which serves as a clear action plan for the implementation of initiatives to increase the sustainability of Tubigon.
6.3 Importance of the Issue

The foundation of the economy of Bohol Province -in which Tubigon is located- is agriculture, fishery and tourism. Consequently, the viability of the municipality’s (and the province’s) economy depends on the health of its natural resources: fertile soil, clean water, high biodiversity, adequate forest cover, and healthy mangroves, seagrass, and coral reefs. The poor in the province’s rural and urban areas are particularly dependent on the province’s natural resources. Tubigon is acutely aware that it is in its interest to preserve the natural habitats that support the socio-economic and cultural life of Bohol in the face of current sustainable development challenges. Additionally, Tubigon is also aware of the need to meet the United Nations Millennium Development Goals (MDGs) and from the beginning has chosen to link its ecoBUDGET to the MDGs. As a result, Tubigon’s ecoBUDGET process is based on the strong participation of community groups and barangays.

6.4 Description of the Case

In April 2005 a municipal administrative order created Tubigon’s ecoBUDGET Local Implementing Team. Composed of nine municipal staff from different offices and departments, the team is the focal point for ecoBUDGET in the municipality and is in charge of drafting the annual ecoBUDGET Master Budget and the other relevant documents. The Office of the Municipal Planning and Development Coordinator serves as coordinator.

Citizen and stakeholder participation is an integral component of Tubigon’s policy implementation process, and is therefore a key part of its ecoBUDGET management system. The process begins with the ecoBUDGET indicators, targets, and measures being discussed and debated by members of the Municipal Development Council, which consists of representatives of all elements of Tubigon society. MDC representatives are encouraged to inform and consult directly with their communities about ecoBUDGET. After the Master Budget is approved, the LIT works directly with different stakeholders and citizens’ groups to implement the
planned measures. Both informal meetings and community assemblies are held to coordinate citizens’ involvement in the implementation of measures.

At the end of June 2005 Tubigon kicked off its first ecoBudget cycle with a high level of local involvement: 15 municipalities as well as numerous representatives from the private and non-governmental sector attended the kick-off meeting.

Because ecoBudget is an environmental development initiative it must pass through Tubigon’s 48-member multi-sectoral Municipal Development Council. In July 2005, after consulting and deliberating, the MDC shortlisted environmental issues and concerns based on priorities, applicability, and the capacity of the stakeholders to implement. From July to October 2005, several dissemination events took place to keep the public involved and informed about the development of the draft Master Budget. The six subsequently ratified environmental resources that form the basis of Tubigon’s Master Budget are: Drinking Water, Forest Cover (Upland Forestry and Mangrove Cover), Timber/Fruit Trees, Coral Reefs and Seagrass Beds, Quarry Materials, and Good Built Environment.

On November 22, 2005 the MDC ratified and endorsed the 2006 draft Master Budget. Next, the draft Master Budget was reviewed by Tubigon’s municipal council and endorsed by the three-member Committee on Environment. In December 2005 Tubigon’s 2006 Master Budget ordinance was unanimously ratified and enacted by the municipal council.

After Tubigon’s Master Budget was approved for implementation, the LIT, together with a team of Bohol provincial staff, prepared an annual workplan for each municipal sector that was incorporated into the respective departments’ annual workplans.

During 2006 a variety of initiatives were implemented by various departments in order to meet the targets set in the Master Budget. Initiatives included the planting of timber and fruit trees, reforestation of mangroves, establishment of a new marine protected area, and the implementation of an ecological solid waste management program.
From October to December 2006 the Tubigon LIT drafted a Budget Balance which showed progress made towards the targets set out in the Master Budget. The LIT conducted consultative meetings with stakeholders regarding the submission of their progress reports. The Budget Balance was approved by the Municipal Council in March 2007. The Municipality approved its second Master Budget for 2007 in December 2006.

6.5 Results

The Municipality of Tubigon is making progress towards its ecoBUDGET targets. The results of its 2006 Budget Balance show:

- The municipality has met most of its short-term targets for indicators in the drinking water resource area except for a reduction in the percentage of non-revenue water because the rehabilitation of old distribution pipelines was delayed.

- The municipality has reached its short-term target regarding the establishment of marine protected areas (the target for 2006 was two new community-managed protected areas) because of strong support from the community and a partnership with non-governmental organisations working towards the same objectives.

- The municipality has met all its short-term targets in the coral reefs and sea grass beds area, forest cover, timber and fruit trees, and good built environment (which focuses on solid waste management) areas.

- The area with the least progress was the Quarry Materials resource, where the municipality has had difficulty making progress due to jurisdictional issues.

- Community involvement in areas such as mangrove reforestation and solid waste management has been very high, which contributed to meeting the ecoBUDGET targets for those resources.
Tubigon has found that its implementation of *ecoBUDGET* has had the following benefits:

- Strengthened the capacity of the municipality to implement an integrated environmental management system through procedural discipline, training, and intellectual support
- Created an enabling environment of appropriate policies, procedures and structures which has allowed the municipality to address and co-ordinate local environmental issues more effectively
- Allowed the municipality to take the lead in initiating environmentally responsible behaviour in its internal administrative procedures and throughout the whole municipality
- Increased political commitment to sustainability
- Achieved greater participation (communication and interaction) between local authorities and stakeholders.

### 6.6 Lessons Learned

Tubigon found that strong community involvement leads to good results. The municipality engaged people’s organisations from the start and continues to engage them in on-going projects (such as mangrove reforestation) to help meet the *ecoBUDGET* targets.

The creation of the LIT as a central co-ordinating team and the incorporation of the *ecoBUDGET* into the relevant departments’ work plans have made implementation less complicated. Additionally, the specific financial budgets for Tubigon’s *ecoBUDGET* activities were reduced because funds for most activities to meet *ecoBUDGET* targets are allocated as part of each department’s annual budgetary allocation.

Tubigon recognised the importance of political commitment and secured the support of elected officials from the very beginning. Since the municipality is currently working on several environmental initiatives involving local and foreign partner NGOs, implementing a program such as *ecoBUDGET* is not new. Tubigon’s current political leadership is very development oriented and welcomes initiatives that promote sustainable community development.
Because Tubigon doesn’t have the power to regulate certain areas (such as quarries) it has been difficult for the municipality to implement make progress in addressing these areas. Tubigon has addressed some concerns and issues unofficially through discussions with its counterparts at different levels of government, however, municipal staff feel that there is a need for more concrete legislative reforms at higher levels of government.

As well as addressing environmental issues, Tubigon has found that ecoBUDGET can be used to address poverty alleviation and the MDGs. In the Quarry Materials resource, an alternative livelihood project is one of the activities in the municipality’s workplan. In the Drinking Water resource, the municipality has plans in place to expand the water service delivery area to provide increased access to clean and safe drinking water. One of the main causes of child mortality in Tubigon is diarrhoea traced to unsafe drinking water.

Tubigon has found that public education on environmental management is crucial. In the Philippines people tend to focus on the economy and prioritise putting food on the table over taking care of the environment. In order to address this situation Tubigon feels that more advocacy and more information campaigns to raise citizens’ level of awareness are necessary. Tubigon has made some progress in this area but still believes it has a lot more work to do.

### 6.7 Key Replication Aspects

The experiences of Tubigon and other cities that have implemented ecoBUDGET have shown that ecoBUDGET can be readily applied in a range of local governments. The instrument is applicable in various world regions, in large cities and small towns, and developed and developing countries, regardless of political persuasion. ecoBUDGET also has the potential to support poverty alleviation efforts and meet the Millennium Development Goals.

Based on Tubigon’s experience with ecoBUDGET, the Province of Bohol has developed a list of recommendations for the implementation of ecoBUDGET in other parts of the province:

- Focus on an annual investment model rather than annual implementation targets. Keep in mind that depleted resources cannot be replaced in a year. Also, a short-term approach is not responsive to gradual, long-term environmental damage such as soil erosion and depletion, biodiversity loss, etc.
Develop environmental indicators appropriate for a rural setting. Since the livelihoods of rural dwellers (such as farming and fishing) are often heavily dependent on natural resources, it is important to address the interrelationship between poverty and environmental degradation. As well, more proactive strategies must be used. Since rural environments are often less degraded than urban environments, it is necessary to focus on preventing environmental degradation, rather than solely reacting to environmental damage. Address relevant local threats (such as El Niño and La Niña) and customize indicators to each locality.

Utilize indicators that measure environmental health, and levels of poverty and natural resources (such as access to safe water and sanitation, time/distance involved in collecting water, prevalence of dengue, percent of rural children under age five who are underweight, number of deaths from natural disasters by income class, percent of farmers on land situated on slopes).

6.8 Staff

One full-time staff person spends part of his time providing administrative support to the Office of the Municipal Planning & Development Co-ordinator and serving as a liaison between and among the LIT members.

Nine municipal staff members from various departments form Tubigon’s Local Implementing Team. As well, there are a number of partners from academia, NGOs, and people’s organisations involved in the project. Tubigon received peer support from the cities of Växjö (Sweden) and Bologna (Italy), two cities with significant experience with ecoBUDGET. Technical assistance was provided by ICLEI staff.
7.1 How to Read the Tables

The two tables represent the two most important steps realised by Guntur and Tubigon in the first part of 2007.

They are a combination of the Budget Balance 2006 and the Master Budget 2007 (the last column). We can see how the cities met (or did not meet) the short-term targets (compare the columns ‘Short Term Target 2006’ and Value 2006’, generating the archery symbol for a clear understanding). Moreover comparing the ‘Value 2006’ with the ‘Long Term Target’ brings to the Attainment of long-term targets percentage and its graphic representation with the green and yellow bullets.

Finally the last column shows the new Short Term Targets 2007, approved by the city councils and forming the Master Budget 2007. In this way both cities have already started their second ecoBUDGET cycle.
## 7.2 Budget Balance 2006 and Master Budget 2007 in Guntur

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<tbody>
<tr>
<td>WATER QUALITY</td>
<td>Monitoring of the Quality</td>
<td># of parameters monitored</td>
<td>1</td>
<td>14</td>
<td>14 (with indicative figure)</td>
<td>14 (with full fledged Laboratory with all equipment)</td>
<td></td>
<td>14 (with indicative figure)</td>
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<td></td>
<td>Attainment of Long-term target</td>
<td></td>
<td></td>
<td></td>
<td>100%</td>
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<tr>
<td></td>
<td>Monitoring Frequency</td>
<td>N. analysis per month, at each reservoir, on a basis of 30 samples per day</td>
<td>1 parameter with 2 samples at each reservoir</td>
<td>2 (on 14 parameters)</td>
<td>2 (on 14 parameters)</td>
<td>5 (on 14 parameters)</td>
<td>3 (on 14 parameters)</td>
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<td></td>
<td>Attainment of Long-term target</td>
<td></td>
<td></td>
<td></td>
<td>40%</td>
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<tr>
<td>WATER QUANTITY</td>
<td>Monitoring the Loss of Water from Pipelines</td>
<td>Descriptive indicator</td>
<td>Water supply through piped Network covered : 80% area; through Tankers 20% area, but water quantity is not quantified</td>
<td>Water supply through piped Network covered : 85% area, through Tankers 15% area, and water quantity is going to be quantified</td>
<td>Quantity of water supply through tankers is quantified and monitored through a special software</td>
<td>Quantity of water supply through tankers is quantified and monitored through a special software</td>
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### Annex - Budget Balance 2006 and Master Budget 2007 in Tubigon and Guntur

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<tr>
<td></td>
<td>Supply of potable water</td>
<td>Litres per capita per day (LPCD)</td>
<td>110</td>
<td>120</td>
<td>120</td>
<td>130</td>
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<td>120</td>
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<td>0%</td>
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<tr>
<td>HEALTH</td>
<td>Monitoring of Waste Collection Monitoring</td>
<td>% of citizens served</td>
<td>50 (assumption)</td>
<td>70 (Proved with an increase in % of segregation facility)</td>
<td>70 (Proved with an increase in % of segregation facility)</td>
<td>100</td>
<td>90</td>
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<td></td>
<td></td>
<td>40%</td>
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<tr>
<td>GREEN CITY</td>
<td>Surface of Green Area</td>
<td>m²/1000 inhabitants</td>
<td>78</td>
<td>89.6</td>
<td>100</td>
<td>200</td>
<td></td>
<td>130</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>10%</td>
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</tr>
<tr>
<td>AIR QUALITY</td>
<td>Assignment of Hawker IDs (Numbers)</td>
<td></td>
<td>450</td>
<td>1395</td>
<td>650</td>
<td>1724</td>
<td>(Year 2015)</td>
<td>1540</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>74%</td>
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</tr>
<tr>
<td>Monitoring of Concentration of Suspended Particulate Matter</td>
<td>Qualitative indicator</td>
<td>No Monitoring System at GMC</td>
<td>No Monitoring System at GMC</td>
<td>To introduce monitoring system and monitor SPM once in a month at one location</td>
<td>A full fledged monitoring system in place at GMC</td>
<td></td>
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</tr>
</tbody>
</table>

**Attainment of Long-term target**

The city council of Guntur Municipal Corporation approved the Budget Balance 2006 in March 2007 and the Master Budget 2007 in June of the same year. The document clearly shows that most short-term targets for the year 2006 have been brilliantly met, the only problems being within the two indicators of the resource “water quantity”. A second consideration has to be devoted to the “courage” of the city councillors, who dared to set very ambitious targets for the year 2007, especially for the surface of green area and monitoring of waste collection. Moreover it has to be noted how for some indicators already the long-term target attainment is on a very good trend.
### 7.3 Budget Balance 2006 and Master Budget 2007 in Tubigon

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>DRINKING WATER</td>
<td>Sources Positive for Colliform (out of 12 Municipal Waterworks sources)</td>
<td>#</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td></td>
<td>Turbidity (Municipal Waterworks Sources meeting DOH Standard concentration for suspended solids (ntu))</td>
<td>#</td>
<td>0</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attainment of Long-term target</td>
<td>%</td>
<td>60.0</td>
<td>57.6</td>
<td>55.0</td>
<td>20.0</td>
<td>35.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Systems loss (non-revenue water [NRW])</td>
<td>%</td>
<td>60.0</td>
<td>57.6</td>
<td>55.0</td>
<td>20.0</td>
<td>35.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Attainment of Long-term target</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>FOREST COVER</td>
<td>Area Covered or Reforested</td>
<td>Ha</td>
<td>550</td>
<td>553.7</td>
<td>555</td>
<td>600</td>
<td>560</td>
<td></td>
</tr>
<tr>
<td>(COASTAL ZONE)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Attainment of Long-term target</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8</td>
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</tr>
<tr>
<td><strong>TIMBER AND FRUIT TREES</strong></td>
<td>new trees planted</td>
<td>#</td>
<td>0</td>
<td>4,279</td>
<td>4,000</td>
<td>20,000</td>
<td></td>
<td>6,000</td>
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<tr>
<td></td>
<td>survival rate</td>
<td>%</td>
<td>0</td>
<td>75</td>
<td>70</td>
<td>70</td>
<td></td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>establishment of protected areas</td>
<td>#</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>12</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td><strong>CORAL REEF AND SEA GRASS BEDS</strong></td>
<td>coral and sea grass cover</td>
<td>%</td>
<td>40</td>
<td>41</td>
<td>45</td>
<td>70</td>
<td></td>
<td>48</td>
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</tbody>
</table>

**Attainment of Long-term target**

- New trees planted: 21%
- Survival rate: over 100%
- Establishment of protected areas: 29%
- Coral and sea grass cover: 3%
<table>
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</thead>
<tbody>
<tr>
<td>QUARRY MATERIALS</td>
<td>Established Marine Protected areas</td>
<td>Ha</td>
<td>196</td>
<td>240</td>
<td>222</td>
<td>287</td>
<td><img src="image" alt="48%" /></td>
<td>260</td>
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<td></td>
<td>Attainment of Long-term target</td>
<td>48%</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Unregulated quarry permits</td>
<td>#</td>
<td>50</td>
<td>50</td>
<td>45</td>
<td>0</td>
<td><img src="image" alt="0%" /></td>
<td>35</td>
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<tr>
<td></td>
<td>Attainment of Long-term target</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alternative livelihood introduced</td>
<td>#</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td><img src="image" alt="0%" /></td>
<td>5</td>
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<tr>
<td></td>
<td>Attainment of Long-term target</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>GOOD BUILT ENVIRONMENT</td>
<td>% of reduction of Solid Waste in tons/cu.m.</td>
<td>%</td>
<td>0</td>
<td>49.19</td>
<td>5</td>
<td>30</td>
<td><img src="image" alt="over 100%" /></td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Attainment of Long-term target</td>
<td>over 100%</td>
<td></td>
<td></td>
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</tbody>
</table>
The Municipality of Tubigon has proved to have fully understood and managed the mechanisms and the goals of *ecoBUDGET* system.

First of all it has to be noted that not only were 7 out of 13 short-term targets for the year 2006 reached, but also that in three cases (Sources Positive for Colliform, Survival rates of timber and fruit trees, % of reduction of Solid Waste) the long-term target has been met, long before the year 2015! This proves how *ecoBUDGET* can be used to analyse the needs and challenges of a local authorities, comparing them also with the perception of media and citizens. This is especially true in a place like Tubigon, where targets setting has been continuously managed through a fully participatory methodology involving villages, associations, experts and politicians.

The only two serious problems regarding the meeting of annual targets have been shown within the system loss of the drinking water system, the coral and sea grass cover, the unregulated quarry permits and the alternative livelihoods introduced. Nevertheless even for these four indicators the administration could convince the city council to approve even more ambitious targets for the year 2007. We will see at the beginning of 2008, if this courageous decision will have proved to be the right one.
Acknowledgments

This project would have never been possible without the valuable contribution of each of the following persons: we hope that we have not forgotten anyone!

Project Manager:
Pamela Lama | Municipality of Bologna, International Relations, Co-operation and Projects Office

Financial Manager:
Manijeh Morshedi | Municipality of Bologna, International Relations, Co-operation and Projects Office

Municipality of Bologna (Italy)
Anna Patullo | Deputy Mayor to Environment, Civil Protection and Sport
Paolo Natali | President of the Territory, Infrastructure and Environment Commission of the City Council
ecoBudget Local Implementation Team | Municipality of Bologna
Sarah Elisabeth Lane | International Relations, Co-operation and Projects Office | Project Assistant and Graphic Support
Gabriele Magli | Hera Bologna S.r.l., Environment | Health and Quality Manager

Municipality of Växjö (Sweden)
Carsten Wulf | Commissioner
Patric Svensson | Commissioner
Carl-Gunnar Hagberg | Commissioner
Annakarin Unger | Environmental Management Co-ordinator | Strategic Planning Department
Julia Ahlrot | Manager Quality and Environment | Technical Services Department
Jan Everling | Water Quality Expert | Technical Services Department
Guntur Municipal Corporation (India)

Hon. Kanna Nagaraju | Mayor
Hon. Siddharth Jain | Commissioner / Local Programme Manager
Hon. T Murali Mohan | Deputy Mayor
Hon. Ch Yesuratnam | Ex-Mayor and Project Co-ordinator
Hon. Rama Rao D | Ex-Commissioner and Project Manager
Hon. S Rajendra Prasad | Ex-Deputy Mayor
Sri. P Satyanarayana | Technical Manager and Municipal Engineer
Sri. Muzebuddin | Ex-Technical Manager and Municipal Engineer
Sri. K J Upendra Singh | Ex-Technical Manager and Municipal Engineer
Sri. S Chakrapani | Local Project Assistant and Deputy City Planner
Sri. Y Nageswara Rao | Technical Manager and Deputy Executive Engineer
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Sri. A Lakshmiyah | Ex-Deputy Technical Manager and Deputy Executive Engineer
Sri. R Nagesh Babu | Ex-Deputy Technical Manager and Deputy Executive Engineer
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Sri. V Chandra Shekar | Ex-Technical Asst. Manager and Asst. Engineer
Sadhu Sudheer | Asst. Project Coordinator

Province of Bohol and Municipality of Tubigon (Philippines)

Bohol Province:
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Atty. Juanito G. Cambangay (deceased) | Provincial Planning Development Co-ordinator
Engr. Ronilita M. Bunado | Project Development Officer III Head | Environmental Management Sector
Atty. John Titus J. Vistal | OIC, Provincial Planning Development Co-ordinator
Mr. Renato Villaber | Head, BEMO
Mr. Metodio Maraguinot Jr. | Administrative and Information Officer for ecoBUDGET
Ms. Nefef Flor Geniston | Administrative Assistant

Municipality of Tubigon:
Hon. Paolo Lasco | Outgoing Mayor
Hon. Luna Piezas | Municipal Mayor
Engr. Noel Mendaña | Municipal Planning Development Co-ordinator
Hon. Alfredo R. Batausa | Municipal Vice Mayor
Acknowledgments

Hon. Marlon Amila | Municipal Councilor
Hon. Alvin Uy | Municipal Councilor
Ms. Marina Montilde | Municipal Accountant
Ms. Yolanda Labella | Municipal Agricultural Officer
Engr. Dionisio Sarpamones | Municipal Engineer / Solid Waste Manager
Engr. Rolando Arcayos | Municipal Waterworks Manager
Mr. Victor Boligao | Municipal Fishery Technician
Mr. Brainardo Boligao | Municipal Zoning Inspector
Mr. Roy Rhabee Jones Omaña | Data Controller | Municipal Planning Office

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Mahallah L. Adalia | Training Manager
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