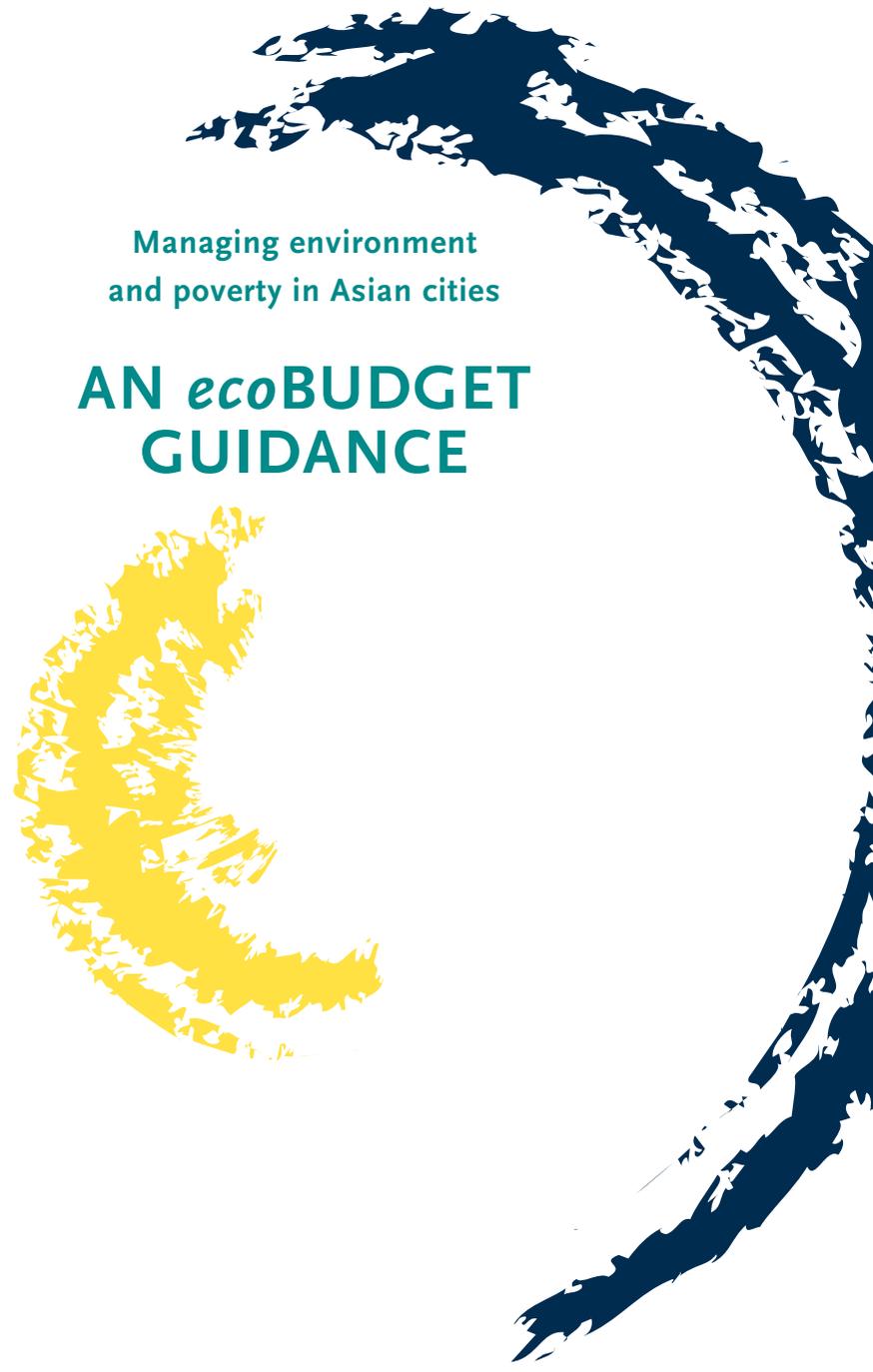


Managing environment
and poverty in Asian cities

AN *eco*BUDGET GUIDANCE



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and poverty in Asian cities

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ecoBUDGET



TABLE OF CONTENTS

1 Introduction	14		
2 Environmental Budgeting for developing countries	16		
2.1 United Nations Millennium Development Goals	19		
2.2 <i>eco</i> BUDGET and poverty alleviation	20		
2.3 <i>eco</i> BUDGET in the context of ecosystem services	21		
2.4 Environmental management and governance	23		
3 The development and application of <i>eco</i>BUDGET	26		
3.1 Origin and development	26		
3.2 Practical application	28		
3.3 How <i>eco</i> BUDGET works in developing countries	29		
4 <i>eco</i>BUDGET: How it works!	32		
4.1 Step 1: Pre-Budget Review	36		
4.1.1 Inaugural vote of the Council	37		
4.1.2 Setting up the <i>eco</i> BUDGET Team	37		
4.1.3 Preliminary analysis, or statement of environmental assets	38		
4.2 Step 2: Budget Planning	40		
4.2.1 The Master Budget	41		
4.2.2 The sustainability analysis	52		
4.3 Step 3: Budget Approval	54		
4.3.1 The Master Budget draft	54		
4.3.2 Presentation to the Council	54		
4.4 Step 4: Budget Spending	56		
4.4.1 Agreement on Measures and assignment of responsibilities	56		
4.4.2 Measures, existing activities and events	57		
4.4.3 Monitoring and accounting	62		
		4.4.4 Corrective measures	62
		4.5 Step 5: Budget Balancing	63
		4.5.1 Balancing the accounts: preparing the Budget Balance	63
		4.5.2 The Internal Audit	64
		4.5.3 The balance report	65
		4.5.4 The Budget Balance Approval	65
		5 Appendix –	68
		Case Study of <i>eco</i>BUDGET implementation in:	
		Balilihan (Philippines)	70
		Jagna (Philippines)	76
		Maribojoc (Philippines)	82
		Pilar (Philippines)	90
		Talibon (Philippines)	98
		Tubigon (Philippines)	104
		Rajshahi (Bangladesh)	112
		Thimphu (Bhutan)	118
		Guntur (India)	124
		Bologna (Italy)	132
		Växjö (Sweden)	140
		6 Annex – Budget Balance 2012 and Master Budget 2012 in Thimphu, Rajshahi, and Balilihan	148
		6.1 How to read the tables	148
		6.2 Master Budget 2012 and Budget Balance 2012 in Guntur	150
		6.3 Master Budget 2010 and Budget Balance 2012 in Rajshahi	156
		6.4 Master Budget 2012 in Balilihan	162

FOREWORD

HON. ATTY. FORTUNATO “BIC-BIC” R. ABRENILLA

Mayor Municipality of Jagna, Province of Bohol, Republic of the Philippines



The PDMS and *eco*BUDGET tools concretised the alignment of projects and programme of the Local Government Unit (LGU) vis-à-vis its mission of development with efficient management of natural resources through good governance. With this, it has secured the ISWM implementation's success.

HON. WILSON L. PAJO

Mayor Municipality of Pilar, Province of Bohol, Republic of the Philippines



Following the introduction of *eco*BUDGET to the municipality, many of the environmental issues which contributed to problems highlighted by the PDMS data were more clearly identified, and so could be addressed, through measures both direct and indirect. The integration of the two tools (PDMS and *eco*BUDGET) has been instrumental in the implementation of environmental projects that simultaneously address economic, social and environmental concerns.

HON. VICTORIA M. CHATTO

Mayor Municipality of Balilihan, Province of Bohol, Republic of the Philippines



I would like to express my gratitude and appreciation to the DReAMS Project for including the Municipality of Balilihan as one of the project's beneficiaries. It was a significant help to us. Linking the Poverty Data-Base Monitoring System (PDMS) with *eco*BUDGET opened our minds to identify and prioritise projects based on reliable data and systematic budgeting and planning.

KINLAY DORJEE

Mayor Thimphu Thromde, Kingdom of Bhutan



The Realising DReAMS project, supported by the European Union, has helped Thimphu to look critically at environmental and social issues and provided a planned and integrated approach to tackle them. Although, Thimphu does not have urban poor in the general sense of the term, the project helped us to make plans to confront environmental issues that by definition have social implications. Among them were waste management, water losses, and protection of biodiversity, all of which are of high importance to the city. It has also provided the unique opportunity for the officials in my administration to benefit from the experiences of cities in our neighboring countries. We have been able to conduct a comprehensive survey

of the whole city, in order to get first hand information on its environmental and social issues. Then in a second step, the PDMS software that was provided by our partner the Province of Bohol, has helped us identify areas which require support from Thimphu Thromde for development. In the future, we will try to make use of the *eco*BUDGET tool to plan our development activities with time bound targets and proper monitoring of actions. I am proud of the achievements of my city and am very thankful for the great work of my staff, as well as our partners in the Realising DReAMS project. Without all this dedicated work, none of this would have been possible. Therefore, I hope that this manual will help other smaller local authorities in my country and elsewhere to learn from our experiences and take up these tools for their own development activities. In addition, it is my sincere wish to support them through my experienced staff whenever needed and provide them with useful advice and role model activities.

A.H.M. KHAIRUZZAMA

Mayor Rajshahi City Corporation, People's Republic of Bangladesh



I am very happy to be the mayor of Rajshahi, the first city in my country to utilise the environmental management system *eco*BUDGET and the poverty monitoring tool PDMS. The European Union-funded Realising DReAMS project enabled my city to follow this new path and provided assistance where needed. In fact, the very fruitful collaboration with our technical support partner, ICLEI South Asia, and our European and Asian partners, paved the way for the successful adoption and implementation

of *eco*BUDGET and PDMS in our city. We have been able to identify important environmental and social improvements required, such as reducing water losses, decreasing outflow of sewage in open drains, developing green areas and enhancing water body conservation. While *eco*BUDGET helped us to set reasonable yet ambitious targets for these fields and monitor their improvement, the PDMS enabled us to link these actions to the improvement of the living standards of the urban poor. I hope that this manual, documenting our experiences, will be able to guide other cities in my country to take up these two tools to manage their development in a sustainable manner.

K. SUDHAKAR

Commissioner, Guntur Municipal Corporation, India



Guntur was one of the first cities in South Asia to introduce *eco*BUDGET as an environmental management tool. In fact, as the mayor of the city I am very proud that the EU-funded Realising DReAMS project enabled us to assume the role of a front-runner city and thereby inspire other cities in our neighboring countries. During the project, the PDMS software developed in Bohol was modified to the needs of our city. This in turn has given us the opportunity to identify areas where the poorer people are most affected, and take action through the *eco*BUDGET Master Budget to improve their living standards. So far, this innovative approach has shown great potential for poverty alleviation within the city boundaries.

Guntur has already contributed to the previous *eco*BUDGET Asia Guide book which demonstrated the flexibility of the tool. – Originally developed for European countries, the methodology was also applicable to Asia. Through this manual, we hope to give an insight in our city's work and progress by showing how we apply the two tools in order to further improve Asia's sustainable development. I hope that learning more about the first hand experiences made in Guntur will inspire many local governments to join us on our journey towards a sustainable future. I am convinced that the combination of poverty alleviation and environmental protection is highly appealing to many Asian communities.

GINO VAN BEGIN

Secretary General, ICLEI – Local Governments for Sustainability



*eco*BUDGET has been successfully adopted by municipalities in Asia and Europe and promoted by organisations such as UN HABITAT and UNEP. When it comes to the management of local natural resources, it has proven its usefulness to local governments for many years. The implications of *eco*BUDGET, however, go well beyond the mere management of natural resources. In fact, *eco*BUDGET can help local governments tackle an issue of ever increasing importance: poverty alleviation.

In this regard, *eco*BUDGET contributes significantly to two out of eight UN Millennium Development Goals at the same time: poverty alleviation and environmental sustainability.

By managing its natural resources in a sustainable and efficient way, local governments help provide and preserve what is necessary for their citizens. The community's natural resources, such as fresh drinking water, contribute substantially to the well-being of its inhabitants. Their access to these resources increases their living standard considerably and hence reduces their relative poverty. *eco*BUDGET responds to Indira Gandhi's tragically true words that poverty is the most polluting substance of all by helping local governments to consciously and thoroughly approach the environment-poverty nexus.

The Realising DReAMS project explored this aspect of *eco*BUDGET further, and I am proud to say that it proved successful. The Province of Bohol (Philippines), the municipality of Rajshahi (Bangladesh), the municipality of Thimphu (Bhutan), and the Guntur municipal cooperation (India) with the support of ICLEI and the two advanced European cities Bologna and Växjö, applied *eco*BUDGET with a special focus on poverty alleviation. This guide will further explain the relationship between *eco*BUDGET and poverty alleviation, outline the instrument in more detail and provide some examples of its practical application. ICLEI itself will continue to support local governments in applying *eco*BUDGET. Our hope, however, is that through the experiences highlighted in this guide, we can shift to a culture of sustainability – economic, social and environmental. In addition we hope that the contents of the Rio+20 outcome document “The future we want” can become a reality, especially for the next generation.





1

INTRODUCTION

*eco*BUDGET is designed to support local governments from all over the world in managing their resources in a sustainable and efficient way. The basic idea follows the assumption that natural resources can be managed in the same way financial resources, such as money, are managed. Hence, natural resources are treated similarly to financial resources, even though no monetary value is attributed to these resources as such. It takes stock of the local resources and helps municipalities to draw up a budget for their annual use.

Through the sustainable management of natural resources, *eco*BUDGET can contribute to the alleviation of local poverty and the attainment of the Millennium Development Goals (MDGs). Land degradation and the loss of biodiversity affect poor people most, since they directly depend on natural resources such as food, building material, firewood and clean drinking water. Living in less favourable areas exposes them to disasters such as fire, landslides and floods as well as to toxic dumps and to polluted air and water. This disproportional exposure leads to a further decline in their quality of life and accelerates the deterioration of their health. Thus, the sustainable management of natural resources and the preservation of the environment can have a considerable impact on the living conditions of the urban poor. By granting them access to a healthy environment that supports the provision of necessary resources and services, the livelihood of poor people is considerably enhanced.

In order to achieve that, *eco*BUDGET supports local governments in planning, monitoring and influencing the use of their local resources, thereby ensuring sustainable consumption.

The nexus between environmental protection and poverty is one of the driving ideas behind the Realising DR*e*AMS project, which is funded by the European Union and includes partners from Asia and Europe. Together they tackled the challenges of environmental degradation and poverty by applying and implementing *eco*BUDGET and the Poverty Database Monitoring System (PDMS). Over the course of three years, the more experienced European cities Bologna and Växjö and the Southern lighthouse municipality of Tubigon (Philippines) and Guntur (India) assisted Rajshahi (Bangladesh), other municipalities in Bohol (Philippines) and Thimphu (Bhutan) in managing their local resources through the *eco*BUDGET system. This guide illustrates the difficult but rewarding journey of implementing *eco*BUDGET within the framework of the DR*e*AMS project. The first part of the guide gives an account of the history of *eco*BUDGET and explains the framework in which *eco*BUDGET is operating. The potential with regard to poverty alleviation is given particular attention. In the second part, the five steps of *eco*BUDGET are outlined and practical tips for their implementation are provided. Finally, the guide offers case studies from the participating municipalities and illustrates the benefits, as well as the challenges, of *eco*BUDGET.

2

ENVIRONMENTAL BUDGETING FOR DEVELOPING COUNTRIES

“Local authorities need a simple, yet logical and familiar approach to direct and drive environmental or sustainability programmes. In fact, ecoBUDGET provides just this kind of approach.”

“Limits to Growth” (the study by the Club of Rome in the 1970s) brought forward the serious consequences of unregulated 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 on Human Environment in Stockholm 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, mindful of its necessity for sustainable economic development. The global community realised that the impact of a 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 a common commitment and cooperation towards the goal of sustainable development.

Eradicating poverty has been recognised as the greatest global challenge and an indispensable requirement for sustainable development since 1992. But the interlinkage of poverty with

environmental protection is not always recognised and the two global issues are often treated separately. However, compared to the Rio Earth Summit in 1992, the current situation allows us to reflect on the role played by national and local authorities, particularly as the appropriate level to develop and utilise sustainable development strategies.

The outcome of the Rio+20 Summit recognises that the poor depend directly on natural ecosystems for their livelihoods, their economic, social and physical well-being, and their cultural heritage.

Absolute poverty is more typical in the less developed countries of Latin America, Africa, and Asia, while relative-overall poverty is more common in the highly industrialised and developed countries of North America, Europe, or Australia. According to the European Commission, more than 80 million people were identified as living below the poverty line in 2008. Women, youths, migrants, low skilled workers, and the elderly are the most vulnerable groups to face relative-poverty. Statistics also show that one out of five young people in the labour market is jobless, 8% of Europeans

live in conditions of severe material deprivation, and the risk of poverty among the unemployed reached 44% in 2010. From this data, it is clear that even developed countries in Europe suffer from multiple factors of relative-poverty and social exclusion, as outlined in “The European Platform against Poverty and Social Exclusion: A European framework for social and territorial cohesion”.

But the conditions are particularly bad for developing countries. In recent years, the population in the urban areas of South and South East Asia have been steadily increasing, even as the growth rate has shown marginal decrease. In 2010, about 42.6% of the population in Asia lived in urban areas, with an urban growth rate of 2.3%.² The population growth rate varies from country to country in Asia. In 2010, growth rates of 1.2% for Bangladesh, 1.4% in India and 1.7% in Bhutan and the Philippines were recorded.³ However, in the same year the urban population growth rate was reported by the World Bank as 4.9% in Bhutan⁴, 2.42% in India⁵, 2.85% in Bangladesh⁶, depicting the increased urbanisation in these countries.

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. 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 in a key position, as every step of sustainable development at the local level contributes to the global fund of development and environmental conservation.

The United Nations Conference on Environment and Development (UNCED) in 1992 was held in order to arrest the rapid deterioration of the living environment in the world and the possible dangers it held for the entirety of humanity. It affirmed that “humanity stands at a defining moment in history. Integration of environment and development concerns and greater attention to them will lead to the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future. No nation can achieve this on its own: but together we can - in a global partnership for sustainable development.” In order to attain sustainable development worldwide, the Conference adopted the Agenda 21, which “addresses the pressing problems of today and also aims to prepare the world for the challenges of the next century.”

2.1 United Nations Millennium Development Goals

In 2000, 189 nations of the world signed the United Nations Millennium Declaration, committing them to move towards a new global partnership to reduce extreme poverty and setting out a series of time-bound targets, with a deadline of 2015. The Millennium Development Goals (MDGs) comprise a set of eight goals, which have been further expanded to 18 targets with prescribed indicators for monitoring progress. Perusal of these goals and targets shows that all of the goals and targets relate to the functions of local authorities. However, priorities 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 2012 has reported for the first time a decline in the number of people living in extreme poverty⁷. However, in spite of this, nearly one billion people continue to live in slums. 2.5 billion people - nearly half the population of the developing world - live without adequate sanitation⁸. The report states that:

- The rate of deforestation shows signs of decreasing, but is still alarmingly high.
- The world has missed the 2010 target for biodiversity conservation, with potentially grave consequences.
- Key habitats for threatened species are not being adequately protected.
- The world is on track to meet the drinking water target, though much remains to be done in some regions and safe water supply remains a challenge in many parts of the world.
- With half the population of developing regions without sanitation, the 2015 target appears to be out of reach. More than 50% of the population in South Asia and more than 45% of the population in Southeast Asia either practice open defecation or use unimproved sanitation facilities and in fact, improvements in sanitation is often bypassing the poor, indicating a need for focused developmental actions.
- Slum improvements, though considerable, are failing to keep pace with the growing ranks of the urban poor.

Again, the reduction of poverty is the foremost concern expressed in the UN Millennium Development Goal 1. However, this reduction can be achieved not only through the improvement in the economic condition of the urban poor, but also through an improvement in their living conditions, such as access to urban services, urban governance, better decision making powers for the poor, and so on. This is because living conditions not only depend on the economic conditions of people, but also on other factors such as access to basic amenities, social security, security of housing tenure, adequate decision making power and sound urban governance among others.⁹ The provision of a number of these factors is a major responsibility of local governments.

If the arena for accelerated implementation and performance to meet the MDGs 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 *ecoBUDGET* is one such tool developed to facilitate planning and monitoring of developmental activities by local governments.

2.2 *ecoBUDGET* and poverty alleviation

It is important to understand how *ecoBUDGET* is related to the MDGs, ecosystem services and local governments, in order to appreciate its full potential.

The two MDGs most important within the context of *ecoBUDGET* are goal 1: ‘Eradicate extreme poverty and hunger’, and goal 7: ‘Ensure environmental sustainability’. The definition of poverty used is not limited to the mere maintenance of a reasonable economic standard allowing for a certain quality of life, but instead also defined by an individual’s level of access to basic services such as health care, safe drinking water, sanitation and sewage management. Hence, in order to fight extreme poverty it is not only important to improve the economic situation of individuals, but also to ensure their access to important services. At a first glance, however, the connection between *ecoBUDGET* and the provision of these services is not abundantly clear, as *ecoBUDGET* first of all aims at effectively and efficiently managing natural resources. But by doing so, it does have a clear effect on the services provided by ecosystems and hence, directly or indirectly, on the attainment of MDGs 1 and 7.

As mentioned before, ecosystems provide us with food, fresh water, raw materials and medical resources. These services influence people’s minimum standard of living and hence the incidence of poverty and hunger. Concretely, ecosystems can ensure the availability of clean water, clean air, plants for medical use and biodiversity. This in turn can, as one example of many, help prevent the spread of diseases. In addition, ecosystem services, such as the availability of clean water can help strengthen the role of women in developing countries as it is mainly their responsibility to provide this. The example clearly shows the possible influence ecosystems can have on the alleviation of poverty. The complex relationship between ecosystems and poverty will be explained in more detail in the following chapters.

The DReAMS project aimed to explore this very potential by applying *ecoBUDGET* in the management of local communities’ natural resources. The sustainable management of these resources contributed to the alleviation of poverty.

2.3 *ecoBUDGET* in the context of ecosystem services

The previous paragraphs have outlined how the MDGs are connected to *ecoBUDGET*. This is already part of the answer to how *ecoBUDGET* is connected to ecosystem services. However, the following will highlight this connection in more detail, in order to clearly outline *ecoBUDGET*’s potential in this area.

“The Economics of Ecosystems and Biodiversity” (TEEB) study¹⁰, describes ecosystem services as direct or indirect contributions of ecosystems to human well-being. In fact, ecosystems provide many different valuable services to human beings and local governments respectively such as food, clean water, wood, wool and medicines. Besides these material provisions, ecosystems can play an important role in protection from floods, hurricanes, tsunamis and other hazards like soil erosion and landslides. Moreover, ecosystems can contribute to spiritual well-being through cultural or religious significance and provide for recreation and enjoyment of nature. The table on the next page illustrates the relationship between MDGs and ecosystem services.

MDG	Ecosystem services linked to targets
MDG 1: Eradicate extreme poverty and hunger	The availability of food, wood for fuel, water and biodiversity directly influences people's minimum standard of living and hence the incidence of poverty and hunger.
MDG 3: Promote gender equality and empower women	The availability of wood for fuel and water reduces the burden that falls mainly on women and helps to improve gender equality. Women's income is often directly dependent on ecosystem services, for example collection of non-timber forest products.
MDG 4 and 5: Reduce child mortality Improve maternal health	Availability of clean water, clean air, plants for medical use, and biodiversity can all reduce the spread of diseases. Healthy ecosystems help to provide all of the above.
MDG 7: Ensure environmental sustainability	The natural capacity for wastewater treatment, soil formation and other regulating and supporting services help maintain the resilience of ecosystems and biodiversity.

Source: TEEB – The Economics of Ecosystems and Biodiversity for local and regional policy makers (2010)

*eco*BUDGET aims to preserve existing ecosystems. Due to the very different services provided by ecosystems and the huge variety of ecosystems, it can be challenging to guarantee that the local government meets all individual needs for their protection, since not all may be known and the flaws of the local government's current management system not yet apparent. This is where *eco*BUDGET can support local governments in managing their ecosystems by providing them with a tool to manage their natural resources in a straightforward and effective way.

The prefix 'eco' in the term *eco*BUDGET suggests that the tool is designed to manage ecological agendas of cities in an economic manner. Humans are in fact an integral part of that 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. Socio-economic and development-based issues, such as those addressed by the MDGs, are therefore readily integrated with the classical 'green' agenda in tools such as *eco*BUDGET.

2.4 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 even if local governments recognise the need to include environmental aspects in their planning and developmental processes. Local authorities need a simple, yet logical and familiar approach to direct and drive environmental or sustainability programmes. In fact, *eco*BUDGET provides just this kind of approach.

*eco*BUDGET is:

- 🌱 **simple**, when compared to more complex tools that require extensive documentation to implement;
- 🌱 **logical**, as it is based on the classical plan, do, check, improve, and report, which underpins 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 to identify and address the environmental issues or challenges that are most relevant to them.

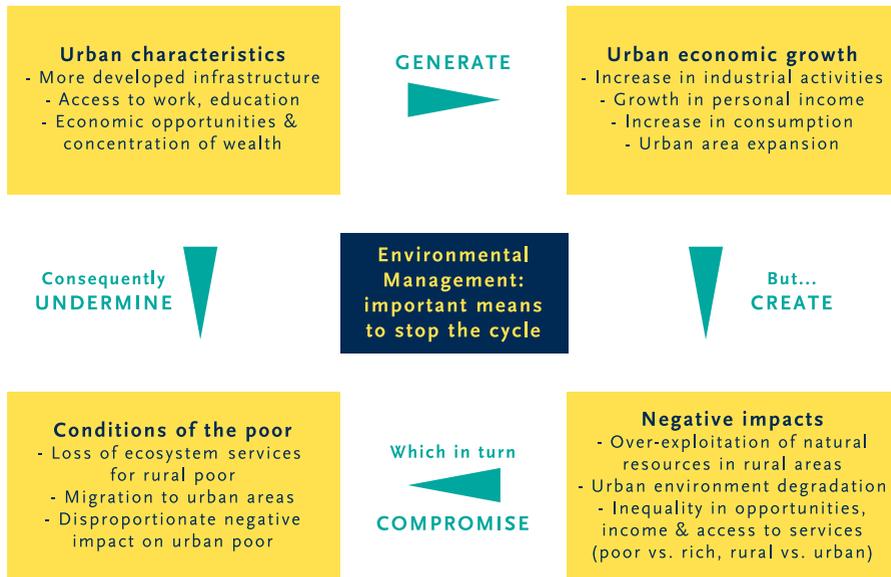


Fig 1

Poverty is a major cause and consequence of environmental degradation and resource depletion. The poor are unable to meet basic needs (food, health care, shelter and education). The poor are:

- heavily dependent on ecosystem services
- more likely to suffer from negative impacts of degradation
- more likely to benefit from improvement in the conditions of ecosystems

In the final document of the Rio+20 conference “The Future we want” the global community clearly recognises that “poverty eradication, changing unsustainable and promoting sustainable patterns of consumption and production and protecting and managing the natural resource base of economic and social development are the overarching objectives of, and essential requirements for, sustainable development.” This closely links to MDG 1 “Eradicate extreme poverty and hunger” and MDG 7 “Ensure environmental sustainability”.

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.

¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0758:FIN:EN:PDF>
² <http://en.worldstat.info/Asia>
³ <http://www.indexmundi.com/facts/indicators/SP.POP.GROW/compare?country=in#country=bd:bt:in>
⁴ <http://www.tradingeconomics.com/bhutan/urban-population-growth-annual-percent-wb-data.html>
⁵ <http://www.tradingeconomics.com/india/urban-population-growth-annual-percent-wb-data.html>
⁶ <http://www.tradingeconomics.com/bangladesh/urban-population-growth-annual-percent-wb-data.html>
⁷ <http://www.un.org/en/development/desa/publications/mdg-report-2012.html>
⁸ <http://www.mdgmonitor.org/goal7.cfm>
⁹ <http://www.rrojasdatabank.info/wpover/gunewardena.pdf>
¹⁰ <http://www.teebtest.org/>

3

THE DEVELOPMENT AND APPLICATION OF *eco*BUDGET

“Since we can manage artificial resources - money - in terms of budget, why shouldn't we do the same with natural resources?”

3.1 Origin and development

This question is the backbone of *eco*BUDGET, the environmental management system developed with local governments in mind. *eco*BUDGET has been designed based on natural capital management, and political and community involvement. Without assigning monetary value to the environment, *eco*BUDGET applies principles and routines of financial budgeting to the management of natural resources.

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

*eco*BUDGET is unique in its requirement that quantitative long-term and annual targets must be ratified by the city Council. By doing so it influences the direction of local environment policies and ensures political commitment to the measures proposed. In addition, the *eco*BUDGET process enables local governments to achieve the global targets of sustainable development. Hence, the *eco*BUDGET principles not only allow for the

establishment of inter se priority regarding local conditions, but also promotes sustainable planning and the formalisation of projects.

The *eco*BUDGET concept enables the integration of environmental budgeting into on-going management processes and the fiscal budget, thereby achieving the targets set by the Local Agenda 21. The system is based on three fundamental principles:

- 🌱 principles and procedures of financial budgeting
- 🌱 full management cycle from planning to realisation
- 🌱 sustainable development as a guiding goal, i.e. targets and actions strive for local sustainability

Local authorities are in the ideal position to achieve this integration of different fields. By applying *eco*BUDGET, natural resources can be managed in the same economically efficient way that the artificial resource “money” is managed. The three main pillars of the *eco*BUDGET management system are the following:

- 🌿 **Resource management:** The conservation of natural resources such as, land, air, water, flora and fauna of an area and the optimisation of their consumption are vital to achieving sustainable development.
- 🌿 **Political commitment:** Formulation and ratification of the environmental budget through a formally convened meeting and the composition of a declaration.
- 🌿 **Technical instruments:** Adoption of the technical and political instruments available for conserving ecological systems through managing the urban development. There exist various processes applicable to a local situation, such as environmental planning, regulatory, economic, and communication instruments, taxes and fees etc. Also mechanisms for awareness raising including public participation and campaigns may be adopted.

3.2 Practical application

Back in 1996, *ecoBUDGET* started as *ökoBUDGET* in the four German local authorities of Dresden, Nordhausen, Bielefeld and Heidelberg. They were the pioneering cities of this environmental budgeting system, which was uniquely designed for local governments.

This initial endeavour ended in 2000, but was promptly followed by the introduction of the system in Kaiserslautern, Germany, which marked the second stage of the *ecoBUDGET* implementation and development in Germany.

Encouraged by successes achieved to this point, the European *ecoBUDGET* was designed and officially initiated in 2003. Six cities from across Europe - Växjö, Amarooussion, Bologna, Ferrara, Kalithea and Lewes, assisted by experienced *ecoBUDGET*teers; Heidelberg and Dresden - began applying the system to their individual situations. Ending in 2004, the application of *ecoBUDGET* on a European level showed impressive results.

Yet, ICLEI and its partners were determined to push the boundaries of *ecoBUDGET* even further and launched *ecoBUDGET-Asia* in 2005. The two Asian local governments, Guntur in India and Bohol in the Philippines, took up the challenge of implementing environmental budgeting in their local government structures. The European cities Bologna and Växjö were crucial to the implementation process in Asia, as they shared their experience and expertise with their Asian partners and supported them greatly.

After *ecoBUDGET Asia* ended in 2007, Realising DR*e*AMS (Development of Resources and Access to Municipal Services) was launched two years later. Besides working with *ecoBUDGET* in Asian local authorities, the project aims to explore additional potentials of the system. By combining *ecoBUDGET* with a Poverty Database Monitoring System (PDMS), DR*e*AMS strives to tackle two major challenges in developing countries at once: poverty alleviation and sustainable development.

3.3 How *ecoBUDGET* works in developing countries

All forms of development create some sort of environmental impact. It can take different forms: transient or permanent, short term or long term, reversible or irreversible. It is imperative that local authorities assess the impact development has on their environmental resources, in order to estimate the price paid for this development. As providing potable water supply is a municipal responsibility, it is their duty to ensure that local sources are conserved and do not dry up or become polluted. Similarly, the collection and disposal of municipal waste costs money and lies within the responsibility of the municipality. Making it both cost effective and environmentally friendly provides the opportunity to improve the delivery of the service. There are several such areas of concern, which can be adapted to meet the needs of the local population and the local environment at the same time.

In the course of applying *ecoBUDGET* a local government has to select an appropriate set of indicators to evaluate the performance, set short and long-term targets, estimate the cost of the foreseen measures and draft a plan for the achievement of the goals set. The experiences of municipalities who have already implemented *ecoBUDGET* show that it is possible to profit from environmentally friendly measures in the short term, as well as in the long term. Being environmentally friendly does not mean that the development of a municipality is hampered - quite the opposite is the case. By always considering the impacts on local natural resources, it is possible to develop in a more sustainable way.

Example: Streamlining activities in Rajshahi

Before the introduction of the Realising DReAMS project, Rajshahi's activities undertaken in the field of environmental development were one-off activities that were not inter-linked.

Through the ecoBUDGET tool, all of these activities were brought together under one umbrella and now the city corporation can work towards specific environmental targets in coordination with the various departments of the corporation. The tool has also helped to identify and prioritise the most crucial environmental problems in the city and plan for activities in a systematic manner to tackle these problems. Through ecoBUDGET, Rajshahi can regularly monitor the action taken and observe the improvements on these identified issues.



4

ecoBUDGET: HOW IT WORKS!

This chapter gives a practical insight into the application of *ecoBUDGET* at the local level and explains the steps involved in more detail. This enables future “*ecoBUDGET* teams” appointed by the Municipal Council to follow each step and coordinate all activities related to the implementation process of *ecoBUDGET*. Moreover, the following explanations and examples are useful for those interested in the *ecoBUDGET* implementation (be they politicians, administrators, employees or stakeholders) who seek assistance in one or more of the phases of the *ecoBUDGET* cycle.

This chapter is structured according to the five stages of the *ecoBUDGET* cycle. Each sub-chapter describes one of the *ecoBUDGET* steps and presents the main activities to be undertaken by the different actors involved, so as to comply with the step’s requirements. In addition, some examples and tips are given, to illustrate how the described steps work in practice.

Two things must be considered. Firstly, for the 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 depending on

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.

Below you can find a simplified illustration of the *ecoBUDGET* cycle.

Overlapping phases

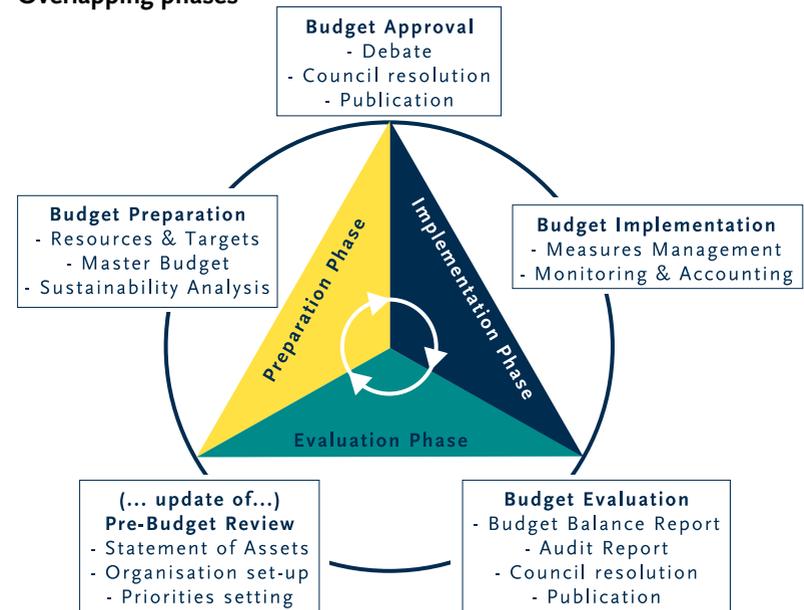


Fig 2

Please remember that...

...at a broad level it is very complex to identify and then generalise the different local actors with different roles in *ecoBUDGET*. This is due to the fact that legislation differs profoundly from country to country. However, it is possible to identify the following categories in very general terms:

- ☉ **Political executive body** is composed of the governing politicians, namely the Mayor and 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** consists primarily of 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 specifically to those employees of the administration involved in the *ecoBUDGET* procedure with a certain degree of responsibility (managers, department heads, experts, municipal commissioners, executive officers, etc.). This category also comprises advisors to the administration as well as staff from service companies (owned by the municipality or contracted) with specific responsibilities in the process.
- ☉ **Public stakeholders** is 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.



ecoBUDGET is an annual cycle. To be exact, *ecoBUDGET* is a cycle with an annual reoccurrence. Depending on the availability of data and information, subsequent *ecoBUDGET* cycles partly overlap. 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 can then feed into the next budget. This follows the necessary process flow and does not cause problems for carrying out any of the steps mentioned. In fact, it 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 for the preparation of the new budget because, in the majority of cases, environmental changes (positive and negative) occur both at gradual or rapid rates (e.g. an 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 mid-term control.

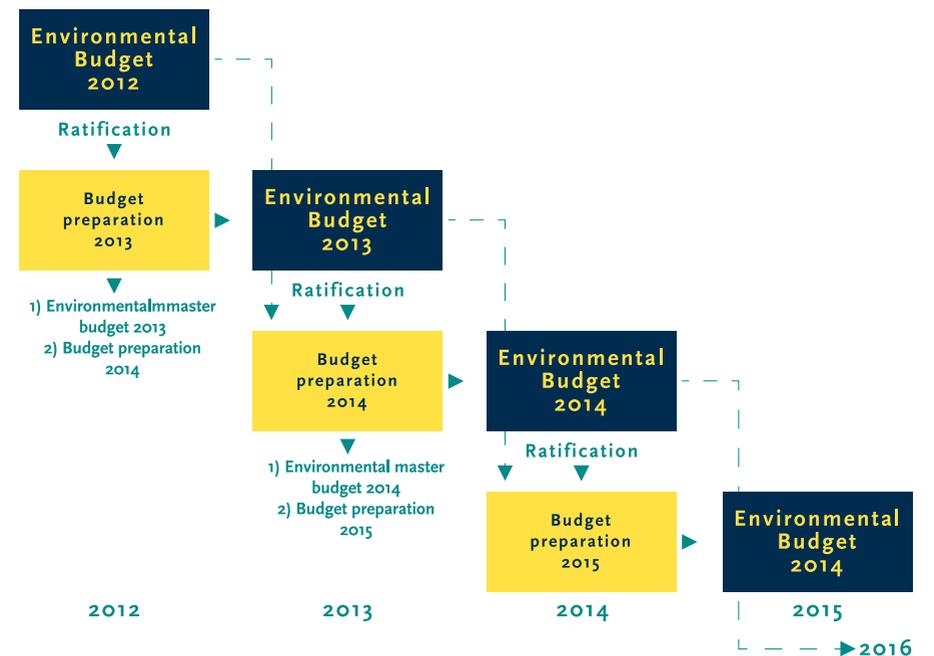


Fig 3

4.1 Step 1: Pre-Budget Review

The first step of the cycle is particularly important, as it lays the foundation for the whole *ecoBUDGET* process. During this first step, roles and responsibilities are assigned, the participatory degree of the process established, a time schedule of activities drafted, the state of the environment reviewed, and the interactions with legal frameworks, existing instruments and environmental impacts considered. It is fundamental to set all of these priorities before proceeding to the second step.

Please remember that...

*...in the starting year, the first step of the *ecoBUDGET* process is of particular relevance, and rather different from the following years. Some slots – like the inaugural vote of the Council – happen only in the first year. Others happen only as a ‘review’ (from the second cycle onwards).*

*Clarifying and accomplishing these prerequisites involves a “one-off” effort at the beginning of the *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.*



4.1.1 Inaugural vote of the Council

At the outset of *ecoBUDGET* it is important that a Council decision legitimates the introduction of the system during an official Council meeting. Normally, the system is introduced to the Council through a comprehensive presentation. Here it is crucial that the city Council members understand the function and the aims of *ecoBUDGET*, and adopt it as their environmental management system, without discussing indicators, targets, and measures in detail. It may be a good 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.

4.1.2 Setting up the *ecoBUDGET* Team

In most cases, either one person or a group of people will initiate the introduction of *ecoBUDGET* in a local authority and lobby for the implementation of the management system.

This introduction may result in the unofficial proposal to prepare the adoption of *ecoBUDGET* within the respective local government. Generally, it is the so-called *ecoBUDGET* Team that is mainly responsible for planning 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. If the latter case is chosen, a number of team members should also come from other departments. Ideally, the team will consist of 5 to 10 high-level local government members (depending on the size of the administration), including politicians and managers. In the optimal case, the establishment of the *ecoBUDGET* Team will follow a cross-departmental approach, ensuring that representatives from all departments relevant for the management of natural, human and financial resources are properly represented. Team members could represent, for example, the transport department, public works, energy supply, and 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 Preliminary analysis, or statement of environmental assets

ecoBUDGET makes use of the concept of preliminary reports, originally used for financial budgeting, and slightly extends its use. Information collected for the baseline reports can be used by the different departments long before they are submitted to the Council. The Council then needs data to predict resource consumption needs for the forthcoming year. The baseline review ensures a certain level of transparency concerning the environmental situation, emerging legal or political frameworks and the development of specific environmental areas. From this information trends can be derived that specialists compare with their own planning schedules. This in turn enables them to produce realistic values for the budget estimates.

The ecoBUDGET Team gathers information from all relevant departments and produces a provisional preliminary report at the beginning of the environmental budget preparation. This serves as guidance and support for the participating administration units. The provisional preliminary report is a regular inclusion to the environmental budget and is presented to the Council. The preliminary analysis will be summarised in a simple table called statement of environmental assets.

It consists of:

- Predicted environmental consumption needs (estimates), i.e. determining the expected consumption of natural resources by planned measures or changes made to day-to-day operations in the coming environmental budget year.
- 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 indicators.
- A report on existing management instruments (e.g. ISO 14000) already adopted in the local authority.

Tip: Use a checklist for planning

In order not to get lost in the variety of issues to be included in the pre-budget review it is 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 can it be measured?



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 important that the same participatory techniques used for setting up indicators for the statement of environmental assets are used for the preparation of the Master Budget. All information coming from different departments, the finance office, senior management, the Agenda 21 Forum, other administrative levels including villages, local organised communities, or individual, external actors, is assessed and summarised by the ecoBUDGET Team.

Experience shows that the pre-budget review becomes easier after the first cycle, since most of this document does not need to be re-written for the following cycles. Nevertheless, it is important to review this at the beginning of each cycle.

4.2 Step 2: Budget Planning

The budget-planning marks the core of *eco*BUDGET. A stakeholder-based process supports the development of *eco*BUDGET's main documents: the Master Budget and the sustainability analysis. Throughout the budgeting process, the relevant issues in the local authority are identified, the resources related to these issues defined, indicators chosen and targets set. 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 summarise the goals of the local government, which will then have to be approved by the city Council during step 3.

Example: from issues to targets in Thimphu

In Thimphu, five environmental issues were chosen to be implemented as part of the Master Budget implementation:

- 1. Waste: reduce the amount of waste/increase the amount of recycled/segregated waste*
- 2. Water: monitor the loss of water in the pipelines and improve water quality*
- 3. Health: decrease the number of stray dogs and increase recreational areas*
- 4. Biodiversity and ecosystem: enhance afforestation and biodiversity protection*
- 5. Transport: increase number of electric cars*

*For each of these issues, Thimphu selected 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 *eco*BUDGET programme in Thimphu, although ambitious targets were set for each of the resources identified, pragmatic indicators were chosen for them. All resources selected for the programme respond to the basic needs of the population of the city.*



4.2.1 The Master Budget

The Master Budget is the crucial overall planning and steering element of *eco*BUDGET. Like the financial budget, the Master Budget must be approved by the Council every year, concluding the planning phase of the *eco*BUDGET cycle. It is a list of five to 15 indicators, describing the utilisation and consumption of relevant natural resources. Each indicator provides data for the base year, the previous year, short-term targets (annual) and long-term targets (10-20 years). It is a challenging process to develop the first Master Budget and fill all five categories with the information needed. The five columns a Master Budget requires are the following: 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 other four remain the same.

Example: Master Budget planning in Thimphu

The Master Budget planning was not an easy task in Thimphu as three important resources relating to the chosen environmental issues fell under the authority of different departments in the organisation. This made the collection of relevant information considerably more difficult. In order to create a baseline, past information had to be collected as well as targets set. At the same time, the administration had to develop future plans to meet all targets and finalise the Master Budget, which entailed numerous consultations and meetings within the city management. Hence, the creation of the final Master Budget proved a challenge to the administration, but managed to foster cross-departmental cooperation at the same time.



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 and broad participation. The proven techniques of participatory processes like Local Agenda 21 or citizen forums are suitable for finding an 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. In addition, it is advisable to consult experts for the selection of appropriate identification and target proposals.

From Environmental Issues to Resources: creating the Master Budget

The *eco*BUDGET concept defines, natural - or rather, environmental - resources as all entities (common goods), which can be used directly by humankind, but which cannot be directly produced by human kind. 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. In brief, *eco*BUDGET broadly defines environmental resources as elements or components of ecosystems (global system), that support human life. These include raw materials, climate stability, air, water, and 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 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 *eco*BUDGET Team starts the process of indicator selection.

Example: selection of resources in Thimphu and Rajshahi

Different places may have more or less similar problems and issues. In turn, the way of defining them through resources can be rather similar. The table below shows how Thimphu and Rajshahi interpreted their problems through resources.

<i>Environmental issue(s)</i>	<i>Corresponding Resource(s) in Thimphu</i>	<i>Corresponding Resource(s) in Rajshahi</i>
<i>Water</i>	<i>Water quality</i>	<i>Health</i>
<i>Water</i>	<i>Water quantity</i>	<i>Water quantity</i>
<i>Biodiversity and Ecosystem</i>	<i>Forest</i>	
<i>Biodiversity and Ecosystem</i>	<i>Fauna and Avifauna</i>	
<i>Green Growth</i>		<i>Water</i>
<i>Green Growth</i>		<i>Trees</i>
<i>Waste</i>	<i>Clean Water</i>	<i>Air Quality</i>
<i>Waste</i>	<i>Health</i>	<i>Air Quality</i>
<i>Transport</i>	<i>Silence</i>	<i>Silence</i>
<i>Transport</i>	<i>Air Quality</i>	<i>Air Quality</i>



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. A total of five to 15 indicators (max. 20) should be drawn up. Compared to traditional environmental reports, *ecoBUDGET* uses a rather small amount of indicators. This is the only way to ensure effectiveness and practicability. With a concise number of indicators instead of a tedious list, both citizens and politicians (i.e. all nonexperts) will find linking the administration's goals and policies easier.

Please remember that...

*...a good *ecoBUDGET* indicator should possess the following features:*

☾ **Clarity:**

*An indicator needs to be expressed in such a way that which parameter it monitors and in which unit it is measured is clearly recognisable. Please, be **clear!***

☾ **Availability of data** (updated with appropriate frequency):

*This is perhaps the most important pre-requisite for the implementation of *ecoBUDGET* in developing countries. It is important to balance 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 this data is capable of being updated at least once a year. Please, be **practical!***

☾ **Predictability** (indicator should be able to identify 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!***

☾ **Comprehensibility** (understandable for 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 the indicator's selection and definition. Please, be **transparent!***

☾ **Representativeness:**

*Not only the individual indicators, also the composition of the indicator sets or the indicator system as a whole needs to be representative. The aim is a representative reproduction of a local community's critical natural resources or most urgent environmental problems. These can be global in nature, such as the local community's contribution to global climatic change through 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!***

☾ **Clarity** (Concise set of indicators):

*During the discussion on the indicator selection, it soon becomes evident, that many things are 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 **concise!***



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 five to 15 years' time and prevents the local authority from losing sight of their route to sustainable urban development.

Environmental quality is therefore represented as a reduction in resource consumption, a reduction in the manufacture of resource-stressing materials (so-called reduction targets), or through compliance with set standards. In certain cases, resources are not consumption based and measurements may hence be qualitative.

In some developing countries, particularly in Asia, it can be difficult to develop long-term targets because of the rapid demographic boom (especially in cities) and the brisk economic growth. In these cases a detailed and accurate baseline report gains even greater importance in order to derive suitable and realistic long-term targets.

Tip: Good ways to select a target

There is not just one way to establish a long-term target. In fact, there is a combination of routes that can be taken:

☞ **Complying with national law.**

In case an indicator is subject to national standards.

☞ **International agreements or protocols.**

In the absence of national laws or guidelines, a city has the possibility to adopt international standards.

☞ **National or international campaigns.**

Targets might be derived from projects or initiatives the city participates in.

☞ **Scientific or political advice.**

Existing targets from similar cities may serve as guidance for target selection. This option applies especially when other target frameworks are missing.



An important aspect to be discussed is the question: How ambitious do we want to be? This question often causes conflict between experts and politicians, as well as between politicians and stakeholders. Another contested question asks: How ambitious do targets have to be? Should one select 'comfortable' targets, so that success can be quickly celebrated, or is it better to set more ambitious targets, that can bestow impulse and momentum towards the sustainable development of the community?

Unfortunately, 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 come up with every target to be set and will have to be discussed each time. It is the *ecoBUDGET* Team's responsibility, and eventually of the city Council, to find the right balance between reliability and ambition for their proposed targets.

Completing the Master Budget - From Long-term to Short-term Targets

Choosing short-term targets is the step that completes the draft Master Budget. It is a crucial element, since it is the decisive point of the planning phase. Year after year, short-term targets are established for each indicator. Before setting the short-term targets for the following budget year, it is necessary to take the previous year's value or reference value into account, as it provides orientation. Because of the phenomenon of overlapping cycles, planners usually have to look at the value of the previous year: if, for example, a city is preparing the Master Budget 2013 in autumn 2012, the most recent reference value will probably be from 2011.

At this point, the base year values, long-term targets and reference years are selected for all indicators chosen and the *ecoBUDGET* Team can finally agree on proposals for the successive 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 one is more analytical: calculating and estimating all the effects of possible measures and external trends. This method is rather complicated and sometimes requires deep analysis. The other way is more 'arithmetical': approaching long-term targets by successive, (more or less) equal steps year after year. Generally, cities will not opt for one or the other method exclusively, but for a mixture of both according to information and expertise available.

The table on the next page shows the Master Budget approved in Guntur.

Example: Table of the Master Budget in Guntur

Realising DReAMS – Master Budget of the Guntur Municipal Corporation

Resource / Indicator	Unit of Measure	Reference Year	Current value (2009 / 2010)	Short-Term Target (2012 / 2013)	Long-Term Target (2015)	Reasons / background for target
Water (Quality / Quantity & Rain Water Harvesting)						
Number of parameters monitored / Frequency of monitoring	No of analysis per month, at each reservoir, on a basis of 40 samples per day	2010	2 Parameter with 2 samples at each Reservoir (40 Samples/day)	4 Parameters with 3 samples at each Reservoir (40 Samples/day)	14 Parameters with 5 samples at each Reservoir (with an increase in no. samples/day)	The number of parameters checked is instrumental to a better control and thus a better quality of water / To monitor the water more frequently and regularly helps in identifying the proper measures to improve the quality
Supply of drinking water	MLD	2010	70 MLD	95 MLD Drinking water supply to be covered to at least 2 Pilot areas	135 MLD Drinking water supply to be covered to entire city	Guntur (GMC) is under the national standards for delivering of water quality
Rain water Harvesting	%	2010	No. of house using RWH system – <1%	To increase in coverage of households – 5%	To increase in coverage of households – 25%	Increase in the % of RWH system in the city. In the future the whole city will be covered.
Solid waste (DTD)						
Waste collection	(% of citizen served)	2010	No correct data available	85% collection and 60% segregation	100% DTD (Door to Door) collection and with an increase in % of segregation	Guntur (GMC) is improving the collection system. In the future the whole city will be served.

Resource / Indicator	Unit of Measure	Reference Year	Current value (2009 / 2010)	Short-Term Target (2012 / 2013)	Long-Term Target (2015)	Reasons / background for target
Environment / Green city (% of green area / plantation)						
Surface of green area	(m ² per 1000 inhabitants)	2010	123	125	130	Green areas are instrumental for better quality of life
Plantation	Number	2010	14000 – saplings with uncertain survival	25000 – saplings with 50% survival	50000 saplings with increasing by 75% of survival	
Ponds / Parks	Number	2010	8	10	12	
Biodiversity (Flora)	Inventory of flora	2010	1 inventory of flora in Guntur	1 inventory of flora in Guntur	Action plan on improvement of flora in Guntur	
Health (slum development)						
Slums	Number of slums developed (in terms of physical/ environmental and social elements)	2010	5 slums	15	With increase in the number of slums coverage (30 slums)	
Energy						
Energy conservation	Solar lighting in parks & LED lights in streets	2010	0%	Solar lighting in parks & LED lights in streets (20%)	Solar lighting in parks & LED lights in streets With increase in 60%	Climate protection / Energy saving
Energy						
Municipal Schools	Result in % (high schools and primary schools)	2010	78% (High Schools) 95% (Primary Schools)	95% (High Schools) 98% (Primary Schools)	98% (High Schools) 100% (Primary Schools)	Improve in results and standards

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. By doing so, the assumption that resource consumption is a basic prerequisite for human living and economic 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 is 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 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.

On the local authority level, practical efficiency or performance indicators need to be found. One way of expressing these is through percentage ratios of resource-consuming activities that are considered to be relatively resource efficient or sustainable. That 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 a 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 the 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 is important to bear in mind that compared to Europe the classifications 'environmental', 'social' and 'economic' are less pronounced in developing countries. Therefore, local authorities might decide to include such indicators in the Master Budget as well.

Good Idea: Lessons learnt in Thimphu

Throughout the implementation of ecoBUDGET, Thimphu gained experience and learnt many valuable lessons that will enable them to be more efficient in the future and to optimise their work.

Lessons include:

- ☺ Proper communication and coordination within the organisation and keeping relevant actors in the organisation updated about the project's activity*
- ☺ Proper book keeping, budgeting and planning of activities to achieve the final goal*
- ☺ The importance of sharing information within the organisation on all relevant activities of the municipality*



4.3 Step 3: Budget Approval

Through a Council decision, the targets of the Master Budget are set in force. The Master Budget is drafted, debated, approved and presented to the public. The administration is bound to implement the politically binding targets.

4.3.1 The Master Budget draft

Once the budget components for all indicators have been compiled as described before, they are sent, as a draft of the environmental budget, to the departments and other participants who were involved in 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 ecoBUDGET Team. Following this, all single budget components are revised for the last time and the close to final version of the Master Budget is presented to the Council.

In parallel, the draft should be fully discussed in public. It is important that each citizen has the chance to get an idea of what the budget looks like. However, it is 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 to be discussed and approved. The explanatory report is primarily a modification of the preliminary report developed during the budget preparation phase. 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.

Finally, it is important to remember that the procedure described above may deviate 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.

Please remember that...

The success of ecoBUDGET depends to a great extent on how seriously it is used for political management. Council discussion, debate, and opinion forming in preparation for a decision are therefore central aspects of the procedure.

The draft budget must not be presented as an overly detailed, comprehensive work - even if collecting information, checking potential sources of error and weighing up priorities between the participating departments and within the ecoBUDGET Team have generated a lot of work. Existing problems and contradictions should be outlined in the textual explanations (explanatory report). In many cases, the Council will send the draft resolution to the specialist committees (environmental panel, finance committee, executive committee, etc.) for discussion and review. They will then advise the Council on their decision making.



4.4 Step 4: Budget Spending

The local government agrees on measures to achieve the targets, monitors and accounts their effects and undertakes corrective activities in case of deviation. The measures planned can be connected to existing planning instruments. In most cases, this step lasts throughout the budget year.

4.4.1 Agreement on measures and assignment of responsibilities

After targets are agreed, it is necessary to establish a series of measures (actions) for each indicator 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 respective 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 shape through the announcement of planned measures that are to be implemented in the up-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 priorities for implementation and all relevant information, such as responsibilities, contact partners, obligations for communication and regulation, etc. The results must be documented properly. A good example for the allocation of responsibilities can be found on the next doublespread page.

To increase the ownership of the *ecoBUDGET* process among citizens and 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 problem regarding measure-management is the fact that the local government does not possess complete information on what happens within its territory. Moreover, since *ecoBUDGET* refers to the entire community across the whole region, the range of unpredictability - expressed generally by the public's response to the administration's goals - must be taken into account.

For this reason, it is recommended that possible impacts on resource consumption and use are analysed by means of:

- 🌱 **Measures:** decided by the city or other actors for meeting the *ecoBUDGET* targets, normally with a positive impact;
- 🌱 **Existing projects/activities:** already agreed plans and projects - often decided before the implementation of *ecoBUDGET* and with environmental impacts;
- 🌱 **Events:** mostly unexpected or unpredictable occurrences, which can have either positive or negative impacts on *ecoBUDGET* (like a natural event, the response of citizens to a particular project/plan, or a new plan decided on by a different authority).

To better interpret all of these cases, they must be kept track of, and their impacts on individual environmental resources, i.e. the indicators represented in the Master Budget, must be analysed.

Example: Measures and responsibility in Jagna

The table shows the list of measures and the corresponding responsibilities for a part of the Master Budget approved in Jagna, in 2012.

Resources	Indicator	Short Term Actions	Frequency of Monitoring	Mainly Responsible Departments (s) and Personnel (with relevant information, names, emails, etc.)
Good Built Environment	reduction of residual waste	IEC on household composting facility	quarterly	INTEGRATED SOLID WASTE MANAGEMENT OFFICE Engr. Peter M. Jamero - ISWM In-charge Ms Laura C. Ranis - ISWM Action Officer
	no. of households practicing segregation at source.	practice of proper segregation of solid waste at source	monthly	- monitoring of HHs practicing waste segregation at source - posting of signages - conduct continuous IEC in the barangays - regular garbage collection services - conduct waste characterization
	Sources Positive for Colliform	in-placed design of waste water treatment facility for slaughter and wet market		- regular radio programs on ISWM implementation - monitoring and evaluation of ISWM Programs - implementation of Phase 1 Sanitary Landfill/Final Disposal Facility
	no. of brgys served by garbage collection	expansion of garbage collection services		- operation of composting facility producing organic fertilizers/vermi cast - strengthening Eco-Savers Club in elementary schools
	Establish Alternative disposal Facility	closed operation of open dump site area and established a temporary residual containing area		- monitoring of Environmental Management System being accredited by ISO 14001
Clean and Safe Air	proper disposal of liquid waste	Liquid waste from Slaughter House, wet market and funeral homes monitored	monthly	
	open burning of garbage	intensive IEC by Purok Level in the barangay regarding enforcement of RA 9003 Act	quarterly	

Resources	Indicator	Short Term Actions	Frequency of Monitoring	Main Responsibility Departments (s) and Personnel (with relevant information, names, emails, etc.)
Water for Agriculture	No. of Impounding or Diversion Dams Constructed/ Rehabilitated	<ul style="list-style-type: none"> - identification of area locations - organizing irrigators associations - construction of mini dam to 	semestral	MUNICIPAL AGRICULTURE'S OFFICE Mr. Camilo A. Rizano <ul style="list-style-type: none"> - organizing and social preparation of farmer-irrigators - networking and linking with government line agencies - strengthening and capacity development of implementation teams - regular consultation meeting - master listing of farmers in the project site - establishment of baseline data - conducting varietal trial and fertilizer trial on identified sites - establishment of municipal nursery for production of seedlings - monitors number of trees grown - documentations
	Irrigated Area in Hectares	rainfeed rice farming		
	crop production per hectare per annum	Promoting organic farming system through demo farming		
Timber and fruit Trees	Area covered or reforested	IEC on household composting facility	monthly	MUNICIPAL DISASTER RISK REDUCTION AND MANAGEMENT OFFICE Engr. Gerry V. Araneta - MDRRM Officer Mr. Vicente Ll. Orias - MDRRM Action Officer <ul style="list-style-type: none"> - identification of tree growing sites - maintenance care and monitoring of job order personnel to manned tree growing sites - responsible for the monitoring disaster preparedness such as dredging and declogging, storm drainage clean-up, etc.
	no. of seedlings of trees (planted & grown)	<ul style="list-style-type: none"> - establishment of municipal nursery - continuing propagation of fruit bearing, growing trees and bamboo seedlings 	monthly	
River waterways	no. of rivers, estuaries with high siltation (declogged)	regular dredging and declogging of rivers, waterways, drainage and canals	Bi-annual	<ul style="list-style-type: none"> - posting of tarpaulin prohibiting disposal of garbage anywhere - close coordination of BDRRM Action Officers

Approved by:
 ATTY. FORTUNATO R. ABRENILLA
 Chairperson-Municipal Local Implementing Team
 DRAMS Project

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 directly after the approval of the Master Budget, which establishes accounts for each of the indicators listed in the Master Budget. After these accounts are established, it is crucial to proceed with the monitoring of impacts and, of course, to keep track of the data. The importance of these two actions must not be underestimated, as only a sound and structured systemisation of these aspects will ensure a good basis for the implementation phase’s completion.

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

- It is the *eco*BUDGET 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 decentralised responsibility for resources - the departments must look for savings possibilities or for a change of course. In the worst case scenario, certain projects must potentially be put on hold.
- It may be wise to apply a monitoring-record template, in order to keep track of all relevant information regarding the monitoring of an individual indicator. This comprises information regarding the department or actor responsible for monitoring the respective indicator, regarding ownership and access to data, the format of data and the format of submission, as well as comments regarding data manipulation or supporting information.

4.4.4 Corrective measures

In case large deviations from the expected course occur 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 on 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 in a so-called Budget Balance report, including simple tables. Politicians and citizens can easily assess progress made towards reaching annual targets and the distance to attain long-term targets. Through an internal or peer-to-peer audit, the process and outcomes are assessed against qualitative and quantitative criteria. The Council then ratifies the Budget Balance and the public is informed about the results of local environmental policies. All outcomes are fed into successive cycles.

4.5.1 Balancing the accounts: preparing the Budget Balance

Ideally, the preceding Budget Balance would be known prior to the preparation of the subsequent one. In reality however, this is not the case, since final values of the first cycle are only ready when the next cycle has already started. To start the next budget preparation, the most recent accounts and the previous year’s Budget Balance need to be applied.

At the end of the environmental budget year, the Co-ordination Team concludes the accounting and draws up the annual balance, i.e. a balance for each indicator included in the environmental budget. The annual balance can be regarded as a core result of the *eco*BUDGET 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-term targets. This presentation allows politicians and the public to immediately view how successful the performance in the respective budget period has been
3. The distance-to-long-term-target index. It shows, as a percentage, how far the on the road to reaching the long-term target, the local government is using the respective base year as a reference point. It is easily calculated by the formula (on the next page)

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

4. A graphic evaluation of the distance-to-target, i.e. the performance against the long-term target. (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 Appendix 6.2. an example of an annual Budget Balance can be found.

Please remember that...

Public administrations in developing countries are not yet very familiar with auditing procedures and figures. That is why it might be advisable in the first 2-3 years of ecoBUDGET adoption to base the internal evaluation on peer-to-peer support. Peer cities that have already implemented ecoBUDGET and are thus aware of the difficulties may offer valuable help to "newcomer cities".



4.5.2 The internal audit

The internal audit serves two purposes: an evaluation of how well organised the process is, and an evaluation of the performance of the recent budget period. The internal auditing process allows for 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, helping those in charge to answer such questions as: Have organisational elements hindered better performance? Could modification help?

4.5.3 The balance report

The Budget Balance should be accompanied by an environmental budget report, which summarises the analysis of the measures (using key words as a minimum) and displays the overall results graphically. The results of the internal audit are incorporated into the environmental budget report and submitted to senior management for presentation to the city Council for debate and ratification.

The main aspect 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 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

All stakeholders involved should 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 draft distribution list. Providing stakeholders with a copy of the draft environmental budget report helps to retrieve opinions and comments, and provides the Council debate with a 'second view'.

The revised environmental budget report is agreed upon by the ecoBUDGET Team and the 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, as well as 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 committees. A concluding Council debate will summarise the results of all other discussions and 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 about 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.

Good Idea: Celebrate your success

The approval of the Budget Balance is the final step of an ecoBUDGET cycle. This calls for a celebration of what has been achieved.

One way of doing this is the organisation of a public event that celebrates the approval of the Budget Balance. This event should be suitable to the local culture and aim at informing citizens and stakeholders about the success or need of improvements with regard to the attainment of the targets. This event should have the biggest possible impact on the local population and media. In the best case scenario, it will develop into an annual 'environmental' day for the local community, thereby keeping environmental issues on the agenda, as well as the public informed.



Tip: ecoBUDGET webcentre

The ecoBUDGET webcentre is a tool that supports local governments from many different backgrounds in managing and monitoring their local resources. It was developed within the Realising DReAMS project and supports the ecoBUDGET implementation in local governments through the fast and easy creation of a Master Budget and a Budget Balance. Let's take a closer look. The Master Budget states the short and long-term targets of the local administration, while the Budget Balance shows how advanced the administration is in achieving these targets, and how much is still to be done. So how can the tool support local governments in creating these documents?

After creating an account, the user has the possibility to create a Master Budget as well as a Budget Balance. To do so, the webcentre tool guides the user through three steps. First, the relevant issues a local government is facing have to be identified. In the second step, resources related to identified issues need to be selected. For the selection of resources, the tool provides a list of suggestions that can be manually completed by the user. Finally, indicators related to the resources must be selected. These indicators need to be filled with data in order to provide an overview of the status, as well as the use, of local resources. All the information inserted into the tool is then compiled and listed in an easy-to-read manner. By providing clear and accessible data the sheets that comprise the tool can be filled quickly. Both the Master Budget and the Budget Balance can be accessed and up-dated at any time, and are considered living documents. After several years they can document the local government's progress in the field of sustainability.

The ecoBUDGET webcentre is free of charge, easy to use and generates quick results that enable politicians as well as members of the administration to comprehensively improve their local sustainability work.

*To find the webcentre, please follow the link below:
<http://webcentre.ecobudget.org/webcenter/budget>*



5

APPENDIX – CASE STUDY OF *eco*BUDGET IMPLEMENTATION IN:

Balilihan (Philippines)
Jagna (Philippines)
Maribojoc (Philippines)
Pilar (Philippines)
Talibon (Philippines)
Tubigon(Philippines)
Rajshahi (Bangladesh)
Thimphu (Bhutan)
Guntur (India)
Bologna (Italy)
Växjö (Sweden)

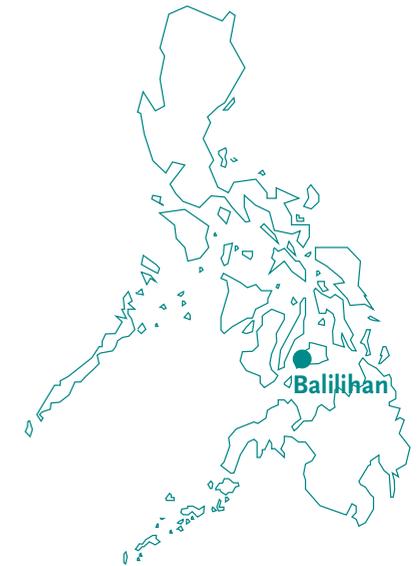




The ecoBUDGET strategy enhances the capability of the LGU not only to clearly identify environmental demand driven projects, but also greatly supports the fund sourcing efforts of the LGU from other government agencies.

CASE STUDY OF *eco*BUDGET IMPLEMENTATION IN

BALILIHAN (PHILIPPINES)



Background Information on Balilihan

Balilihan, formerly a part of the town of Baclayan, was established on September 29, 1828. Its name means a place where “balili” (green grass) grows in abundance.

It is an interior town, located 22 kilometres north-east of Tagbilaran City, Bohol’s capital. Agricultural in nature, its verdant hills and rugged mountains bring forth ample supply of root crops and other farm products, however rice, corn, coconuts, bananas and vegetables are considered the town’s major produce. It has a total land area of 15,022 hectares where 2,125 hectares are declared as timberland and / or forest zone, while 12,897 hectares are considered as alienable and disposable. Balilihan has 31 barangays (administrative division in the Philippines) and every barangay is subdivided into six puroks. Based on the latest Poverty DataBase Monitoring System (PDMS) survey, the town registered a total population of 16,200 with 3,340 households. The town is a 4th income class municipality.

Balilihan has many natural attractions to offer, like the Kawasan and Camogao falls in Barangays Cabad and San Isidro respectively, a natural yet beautiful landscape known as Cogon Nature Gem, a Twin Peak in Barangay

Datag Norte, and some unexplored caves in the barangays. In terms of heritage and culture, the Our Lady of Mt. Carmel Parish Church exhibits magnificent mural paintings. An old Spanish Belfry, constructed sometime in 1837, is considered a historical landmark of the town. Its eastern and western parts are also uniquely traversed by two of the major rivers of Bohol, which is the Loboc and Abatan Rivers respectively. Now Balilihan is proud to say that the town is one of the few towns of Bohol which operates an LGU-managed museum.

Balilihan and *eco*BUDGET

The Development of Resources and Access to Municipal Services (DR*e*AMS) is a European Union funded project which aims to support local authorities to achieve sustainability in their services and urban governance. To attain its goals, two tested tools, the Environment and Natural Resources Management System known as *eco*BUDGET and the poverty tracking tool, Poverty Reduction Database Monitoring System (PDMS) have been introduced.

On September 23, 2010, the Municipality of Balilihan was added as one of the five selected municipalities from the Bohol Integrated Area Development cluster of the province piloted by the DR*e*AMS project. The process formally started through the signing of a Memorandum of Agreement with the project's partners on November 10, 2010.

Prior to the DR*e*AMS project, the Municipality of Balilihan has been a user of the PDMS tool in identifying poverty related issues. The first PDMS survey was in 2006, which covered all 31 barangays. Following the inclusion of the DR*e*AMS project, a second round of PDMS survey was carried out in October of the same year to update Balilihan's poverty database. The Bohol Local Development Foundation (BLDF) was commissioned to conduct the survey with funding support from the DR*e*AMS project and the Provincial Government of Bohol (PGBh). The updated database was used in various interventions and mechanisms, particularly for monitoring them.

The Local Chief Executive for that matter issued Executive Order No. 12, Series of 2010 on December 2, 2010 creating the Municipal Poverty Reduction Action Team/Local Implementing Team to formulate the Municipal Poverty Reduction Action Plan (MPRAP) to address the new set of issues identified in the survey.

On April 27, 2011, a team from the Provincial Government of Bohol – Bohol Environment Management Office headed by Engr. Ronilita Bunado of the Provincial Planning and Development Office together with Engr. Noel Mendana, Municipal Planning and Development Coordinator of Tubigon, Bohol and Dr. Nestor M. Pestelos, DR*e*AMS Project Manager, conducted a workshop in Balilihan on how to prepare an Environmental Management Plan for Balilihan. It was attended by the Department Heads of the Local Government Unit who are also members of Municipal Poverty Reduction Action Team (MPRAT)/Local Implementing Team. One of the tools used in the planning was the CY 2010 PDMS results. The output of the workshop was the Environmental Master Budget. It was finalised by the MPRAT / *eco*BUDGET Local Implementing Team on the first week of May 2011, after which a draft of the plan was submitted to the Environmental Management Board for editing. On June 2011, the edited initial Environmental Master Budget was ratified by the Municipal Development Council (MDC) and was adopted by the Sangguniang Bayan on December 2011. The EMB was set for implementation in January 2012.

The Municipality of Balilihan benefited from much of the *eco*BUDGET process, as it was through the merging of this two tools, the *eco*BUDGET and the town's Poverty Data Base Monitoring System, that the LGU clearly identified demand-driven poverty alleviation projects. It was also very timely for the Municipality of Balilihan, having been awarded with the "Seal of Good Housekeeping Award" for two consecutive years in 2010 and 2011 by the Department of the Interior and Local Government. The seal carried with it a cash award of one million pesos (Php 1,000,000.00) each year. In 2012, the LGU was also given the Local Government Support Fund (LGSF) of six hundred thousand pesos (Php 600,000). The reward money was used to fund the *eco*BUDGET projects of the municipality. As a result, the municipality was able to construct the "Barangay Cabad, Barangay Haguilanan Grande and Barangay Hanopol Norte Waterworks System", and repaired the road leading to the town's New Central Material Recovery Facility in Barangay Baucan Sur.

Other than the identified and implemented *eco*BUDGET projects, the LGU was also able to get the nod of the Department of Agrarian Reform – Agrarian Reform Infrastructure Support Project 3 for the funding of three irrigation projects identified under *eco*BUDGET. Two of those are already in the bidding process and are projected to be functional by the last quarter of 2013.

Results of the *eco*BUDGET Implementation

Through the implemented *eco*BUDGET projects, the people in the barangays of Cabad, Candasig, Magsija, Haguilanan Grande, Hanopol Norte, Hanopol Weste, Del Rosario, and Boyog Norte are now benefiting from access to potable water, while the other implemented project, which is the rehabilitation of the road leading to the New Material Recovery Facility of the town, improved the garbage collection and disposal system of the LGU. It is therefore expected that once the *eco*BUDGET identified projects are fully implemented, a reduction in poverty will be seen in the municipality, as well as an improvement in the town's ecosystem.

Key Findings

The *eco*BUDGET strategy enhances the capability of the LGU not only to clearly identify environmental demand driven projects, but also greatly supports the fund sourcing efforts of the LGU from other government agencies.

Lesson Learned

Going by the experience of previously implemented *eco*BUDGET projects, the administrators of this LGU are already certain that any project that has undergone a thorough and in-depth planning using reliable data as its basis will earn support from donor agencies, thereby addressing the needs of our people, especially those in the grassroots communities.

Replication of *eco*BUDGET in other municipalities

One of the most important factors to ensure successful replication of the project is the political will of those administrators implementing *eco*BUDGET. They must be aware of the environmental issues in their respective municipalities and commit to follow the procedures and strategies in the preparation of the Environmental Master Budget, as well as its implementation strategy. However, prior to all of this, they must be willing to provide updated and easily collectable data regarding their chosen indicators.

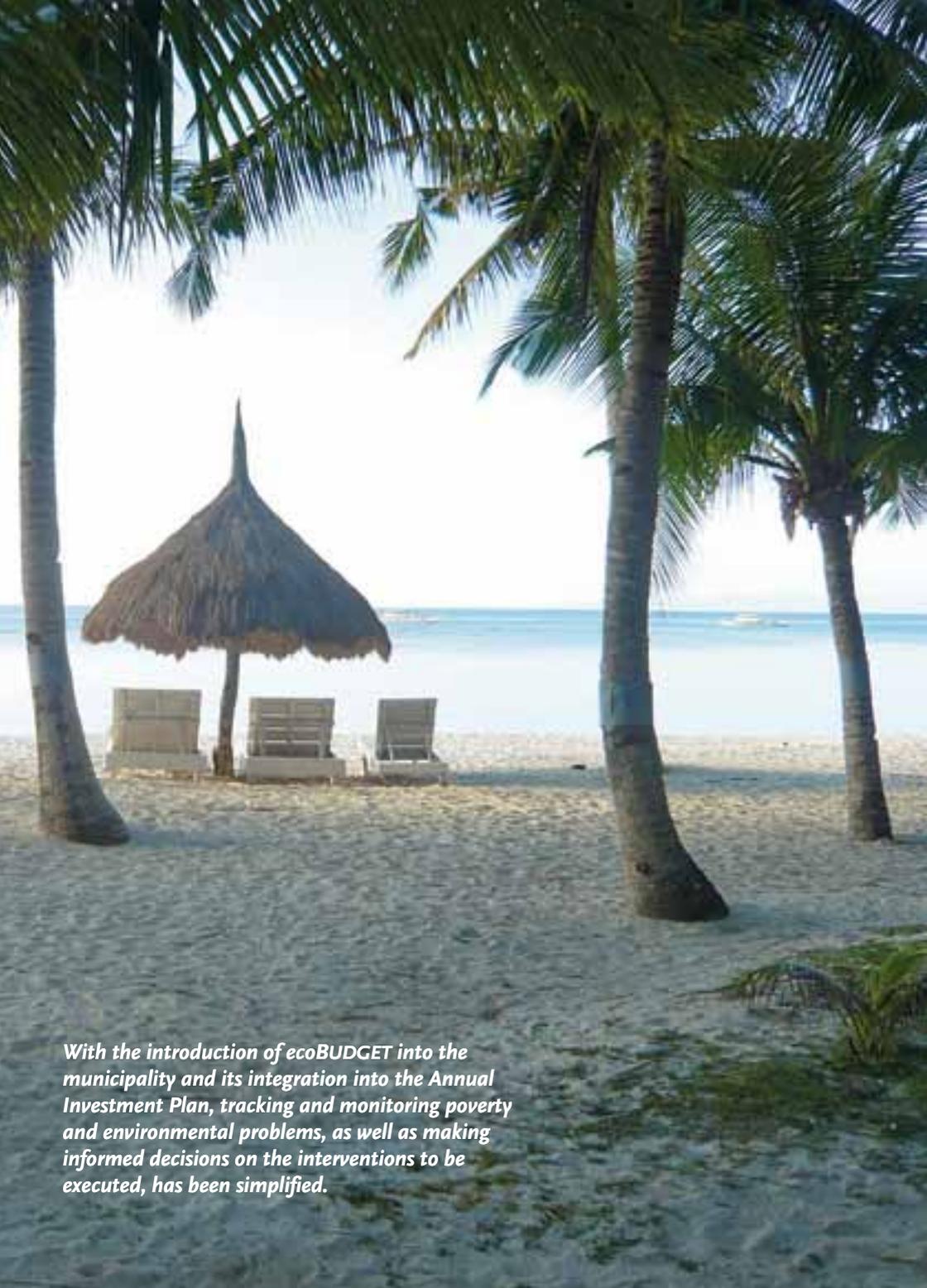
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With the introduction of ecoBUDGET into the municipality and its integration into the Annual Investment Plan, tracking and monitoring poverty and environmental problems, as well as making informed decisions on the interventions to be executed, has been simplified.

CASE STUDY OF *ecoBUDGET* IMPLEMENTATION IN

JAGNA (PHILIPPINES)



Background Information on Jagna

The municipality of Jagna is situated along the eastern coast of the province of Bohol, directly facing northern Mindanao. Its political boundaries include Garcia-Hernandez to the west, Sierra- Bullones to the north, Duero to the east and the Mindanao Sea to the south. Comprised of 33 barangays, it has a total land area of 12,063 hectares. The metropolitan area of Jagna comprises eight barangays, while 25 barangays are situated in upland and coastal areas. The total population based on the 2009 PDMS is 32,034 with 6,375 households and an average size of five persons per household. Agriculture is the dominant economic activity with an agricultural area of 6,426.58 hectares. Fishing is another economic activity prominent within the eight coastal barangays.

Jagna and DReAMS Project

The municipality of Jagna became one of the pilot LGUs for the Realising DReAMS project in 2010. Jagna has been utilising the PDMS since 2005 to aid the municipality in the identification of poverty related problems for intervention.

With the introduction of *eco*BUDGET into the municipality and its integration into the Annual Investment Plan, tracking and monitoring poverty and environmental problems, as well as making informed decisions on the interventions to be executed, has been simplified. The tool has been helpful in addressing the mounting environmental problem the town was facing.

The Local Poverty Reduction Action Team (LPRAT), organised in 2010 through an executive order, has identified a major environmental issue to be addressed using the PDMS and *eco*BUDGET tools. Monitoring using the two tools identified solid waste as a common problem, leading the LPRAT to designate it the catalyst project.

Project Implementation

Based on the PDMS, the LPRAT selected solid waste management as the catalyst project. Addressing this problem would also have the benefit of eventually solving other major problems in the municipality, including flooding in lower areas, contamination of water sources, health and sanitation, and marine habitat degradation.

The Integrated Solid Waste Management (ISWM) project aims to reduce the volume of waste generated per day, improve efficiency of services on waste management from segregation at source to collection, storage and treatment, and heighten the awareness of the people of Jagna on the effects of illicit waste dumping.

Through the PDMS and *eco*BUDGET tools, the management of the solid waste programme identified issues that needed immediate attention in the course of the project implementation. Prioritisation of the lack of a waste disposal facility in the municipality was achieved through continuous monitoring using the tools. Arriving at such a large problem prompted the LGU to work on the establishment of a sanitary landfill. The establishment of the sanitary landfill will address the problem of solid waste management as well as other problems related to water contamination, health and sanitation, flooding and marine habitat degradation.

The LGU's accreditation – ISO 14001 from the TUV SUD Asia Pacific Group aided in the fast tracking of the closure of the open dumpsite in Barangay Bunga Ilaya. The open dumpsite has brought a number of diseases to the residents of

the barangay and the surrounding barangays. It has contaminated ground water in the area and the garbage has floated toward the sea through the waterways in the barangay. The closure led to the establishment of a Residual Containment Area (RCA) at Barangay Can-ipol through a memorandum of agreement with the barangay Council. The RCA necessitated the immediate establishment of a sanitary landfill.

Involvement of key partners in the ISWM implementation was a necessity. The enormity of the problem needed to be solved with the help of the communities affected. This was achieved through the signing of memorandum of agreements in the case of the RCA and the sanitary landfill, non-government organisations working on environmental sustainability and other government institutions. Social marketing was carried out by LGU personnel and NGO partners. Technical know-how was provided by government institutions and NGOs.

The ISWM project is continuously managed and funded by the LGU. The ISWM in Jagna adopted the ring-fencing strategy (isolation of financial account of the ISWM from the general fund) to be able to monitor its own income and expenses.

Results of the *eco*BUDGET Implementation

The LGU was able to accomplish the following:

- 🌱 Identification of the problem of the lack of a proper waste disposal facility;
- 🌱 Positive changes in the mindset and behaviour of the people towards the ISWM;
- 🌱 Open acceptance of citizens towards efforts directed at solid waste reduction (organisation of junk shops, recycling, reducing use of plastic bags in the market on Wednesdays);
- 🌱 Rectified practices with a negative impact on health in waste disposal;
- 🌱 Increased compliance towards proper segregation at source.

Key Success Factors

- 🌱 Integration of *eco*BUDGET in the Annual Investment Plan to guide the budgeting process;

- Strong political will in project implementation;
- Continuous support by the administration;
- Open acceptance by the people;
- Commitment from key partners; and
- Availability of baseline data provided by PDMS and *eco*BUDGET.

Key Challenges

- Changing the mindset of the people in the community where the sanitary landfill will be established;
- Rigid information education campaigns;
- Significant financial requirement to establish a sanitary landfill.

Lesson Learned

Open communication and consultations with communities involved should be conducted prior to programme implementation;

- eco*BUDGET should be integrated annually in the Annual Investment Plan to guide in identification as well as prioritisation of interventions;
- Availability of baseline data to guide in policy-making;
- Monitoring and evaluation of projects should be done to update policy-makers and beneficiaries on status.

Plans for the Future

The Local Government Unit of Jagna, through the Municipal Planning and Development Office, shall endeavour to strengthen the linkage between the PDMS and *eco*BUDGET tools to aid in the identification of meaningful interventions aimed at poverty reduction and environmental sustainability. Strengthening these linkages ensures “guided” budgeting and properly allocated funds for the LGU and its constituents.



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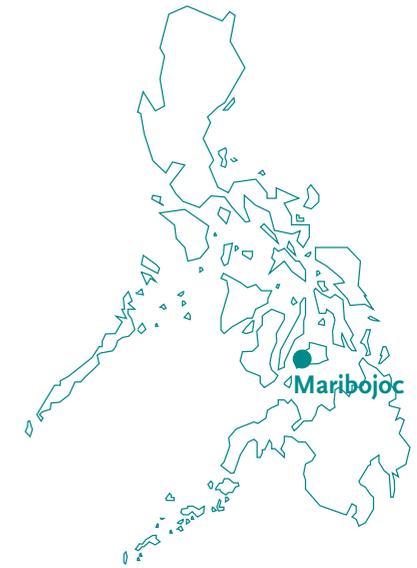
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The efforts of the project to promote proper environmental management was greatly felt by the Local Implementing Team, as well as efforts to make them more aware of the environment and the planning and monitoring tool which was introduced by the DReAMS Project.

CASE STUDY OF *eco*BUDGET IMPLEMENTATION IN

MARIBOJOC (PHILIPPINES)



Background Information on Maribojoc

Maribojoc is a coastal town located in the southwest of the Province of Bohol, Philippines. It is famous for its Punta Cruz Historical Watchtower, the old Holy Cross Church, the scenic Maribojoc Bay, the panoramic mountain ranges, the emerging Abatan River Tour and its hospitable and peace-loving people.

Maribojoc is bounded in the northeast by the Municipality of Antequera, in the northwest by the Municipality of Loon, in the southwest by the Bohol Strait and in the southeast by the Abatan River.

The Municipality is divided into 22 barangays and has a total area of 6,956 hectares. The biggest barangay as far as land area is concerned is Barangay Jandig, which has a land area of 508 hectares. The smallest barangays are Barangay Poblacion and Barangay Anislag, with land areas of 70.84 and 70.83 hectares, respectively.

Maribojoc and *eco*BUDGET

In 2009 the Realising DR*e*AMS Project for South and Southeast Asian Local Authorities, a European-Union funded project with ties to the Provincial Planning and Development Office, was extended to serve five more municipalities (aside from Tubigon, which was already part of the project). Following the criteria that were set by the DR*e*AMS Project Management Office in the selection of the five pilot municipalities, Maribojoc LGU was chosen. The MPDCs of the five municipalities were then called for a project orientation, and to lobby to the Office of the Municipal Mayor for support. Upon LCEs affirmation to join the DR*e*AMS Project, the Local Implementing Team was organised through an executive order. The Local Implementing Team is composed of the following; the MPDC, MHO, MSWDO, MAO, ME, MENRO, Waterworks Manager, CRMO, Sangguniang Bayan (SB) Chair on Environment and NGO Representatives working on Environmental Initiatives. While the crafting of the Memorandum of Agreement (MOA) between the Realising DR*e*AMS Project for South and Southeast Asian Local Authorities and the Bohol Local Development Foundation, Inc. (BLDF) was taking place, several workshops were arranged, which were participated in by members of the Local Implementing Team. The MOA was signed in September 2010.



Project Implementation

The project started with a series of workshops attended by the Local Implementing Team. One of the most important workshops was held to identify the priority environmental issues. Efforts were then made to determine baseline data and information for these issues. This served as a tool for the planning session, which looked at ways of addressing them. During the planning session, strategies, projects and activities were identified, whilst ensuring that the existing municipal programmes and projects were integrated. The planning session included the setting of targets at projected periods to facilitate proper monitoring of the different projects and activities. The output from those workshops served as the Municipal Environmental Master Budget (*eco*BUDGET). The Municipal Environmental Master Budget was presented to the SB for their approval and adoption through a Resolution.

The allocation of tasks then followed, which aimed to ensure that the different activities required were included in the plan of actions for each corresponding office, and that appropriate budgetary allocations were provided to ensure their implementation. It was found that there were projects which need considerable allocations that needed to be out-sourced. Project proposals were then prepared and sent to prospective funders. While the project and activity implementation were going on, continuous mentoring to the Local Implementing Team, especially to the MPDCs were provided. Likewise, regular project monitoring was undertaken.

The efforts of the project to promote proper environmental management was greatly felt by the Local Implementing Team, as well as efforts to make them more aware of the environment and the planning and monitoring tool which was introduced by the DR*e*AMS Project.

Results of the *eco*BUDGET Implementation

The Maribojoc *eco*BUDGET implementation resulted in the following:

- Enhanced capacity of the Local Implementing Team in resource management
- Increase in number of households adopting waste segregation
- Increase in number of farmers adopting the Natural Farming System
- Increase in the mangrove area
- Increase in the local greening rate
- Adoption of wastewater management facilities at the public market and slaughterhouse (ABR and constructed wetland)
- Improved waterworks system
- Increase in the public awareness on the benefits of mangroves
- Establishment of farmers' academy
- Reduction in the number of households without sanitary toilets
- Improvement in the bio-physical characteristics of the MPAs
- Forest Land Use Plan crafted and adopted

Key Success Factors

The determined leadership of the Local Chief Executive is one of the primary contributing success factors. Everyone in the organisation shares his vision, as evident by the fact that all work through their assigned tasks with the utmost dedication. Other government agencies recognised this through awards, financial assistance and other forms of support.

Key Findings

Going through a planning process in order to address environmental issues is instrumental

- Creating a Master Budget with specific targets that can track changes/improvements in identified environmental issues as a result of measures implemented
- Understanding what the *eco*BUDGET tool is and its significance to LGUs
- Learning from the experiences of partner counties, and their respective interventions to preserve their environment
- Appreciation of *eco*BUDGET as a monitoring tool after setting targets based on baseline data
- Appreciation of the continued mentoring given by the DReAMS Project Partners
- Coming up with a catalyst project which addresses both poverty and environmental issues
- Sharing with other partners how to sustain the implementation of the *eco*BUDGET measures at the LGU level
- Identifying the effects of poverty on the environment



Key Challenges

The Local Government Unit of Jagna, through the Municipal Planning and Development Office, shall endeavour to strengthen the linkage between the PDMS and *eco*BUDGET tools to aid in the identification of meaningful interventions aimed at poverty reduction and environmental sustainability. Strengthening these linkages ensures “guided” budgeting and properly allocated funds for the LGU and its constituents.

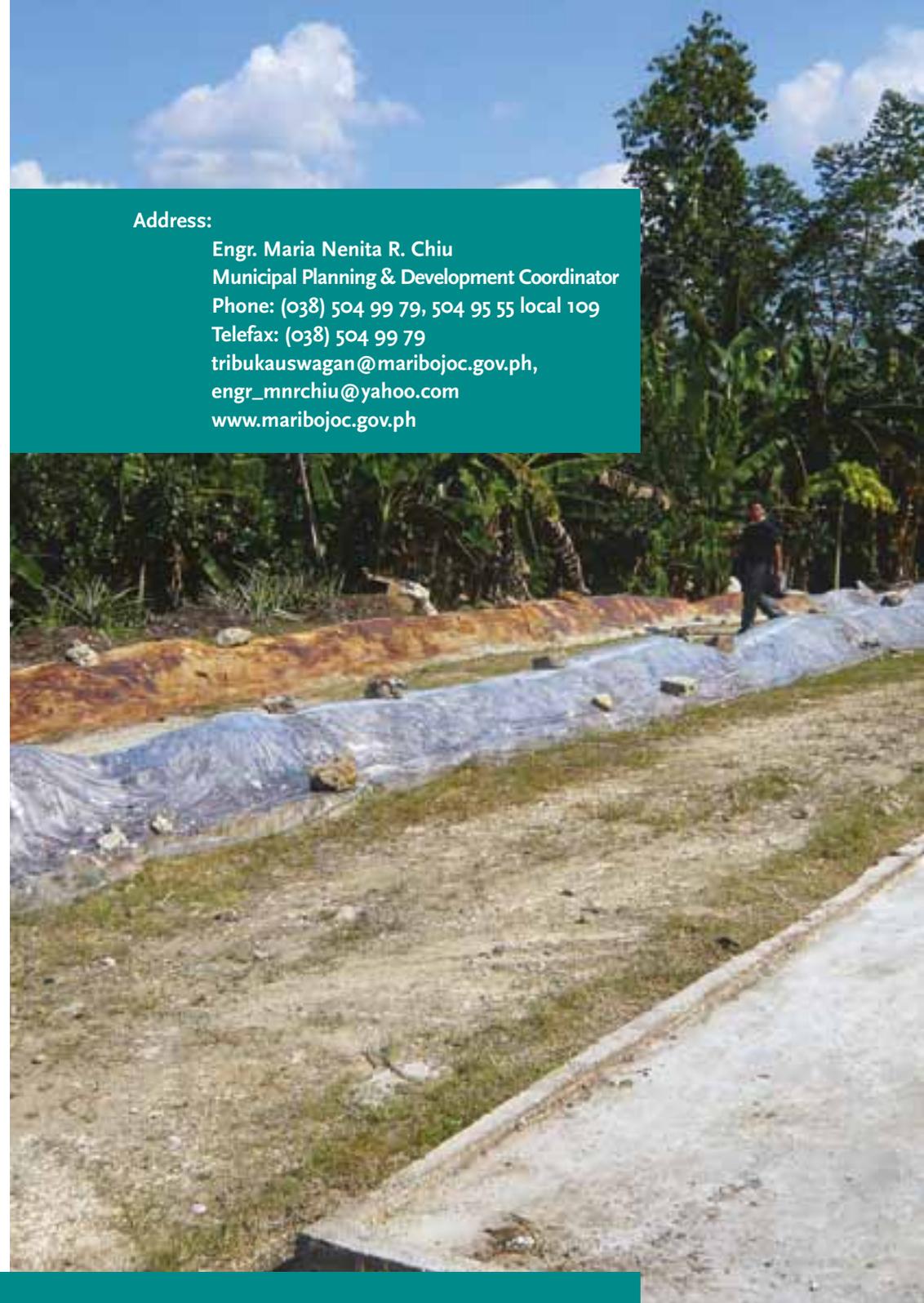
Plans for the Future

Plans for the Future:

- 🌀 Improve data gathering tools so as to better monitor the progress of the project
- 🌀 Re-examine the environmental issues in order to identify new ones not yet covered in *eco*BUDGET
- 🌀 Arrive at more concrete results from the technical cooperation, through assisting LGUs with access funds to finance other activities and projects identified in *eco*BUDGET that require considerable costs

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The integration of ecoBUDGET is an effective tool that provides first hand information leading to the formulation of concrete plans and wise decisions.

CASE STUDY OF *eco*BUDGET IMPLEMENTATION IN

PILAR (PHILIPPINES)



Background Information on Pilar

The Municipality of Pilar is an interior town of the Province of Bohol, comprised of 21 barangays (administrative units) spread across 11,478.9782 hectares (ha). The Municipality is bound on the north by the Municipalities of Ubay and San Miguel, on the southwest by the Municipalities of Duero and Siera Bullones, on the east and northeast by the Municipalities of Guindulman, Candijay and Alicia, and on the west and northwest by the Municipalities of Dagohoy and San Miguel. The Municipality is rich with water reserves as evident by the presence of a 114 ha man-made lake called the Malinao Dam. The lake has a water storage capacity of five million cubic metres, serving about 4,500 ha of the Riceland's situated in the Municipalities of Dagohoy, San Miguel, Alicia, Ubay, and Pilar.

The total population based on the 2010 National Statistics Office survey is 26,887, a decrease of 385 persons from the 2007 survey. The total number of households is 5,084 with an average household size of five. About 63.25% of the total land area is classified for agricultural use, which represents 7,260.7 people.

This area is divided as follows: irrigated riceland (21.02%), 2,413.5 ha; rainfed riceland (12.89%), 1,530.3018 ha; cassava (9.25%), 1,011.2429 ha; cornland (11.94%) 1,370.1449 ha; coconut (7.19%), 825.06 ha; fruit trees (0.51%), 58.551 ha; camote and other crops (0.45%), 51.8964 ha. Government land comprises 1,885.1658 ha (16.42%). Other uses are residential, 64.4684 ha; charitable, 4.4434 ha; institutional, 34.8312 ha; religious 5.6485 ha; submerged, 202.0887 ha; commercial, 3.1057 ha; upland, 1.690.8154 ha; bushland, 301.5190 ha and rockyland, 26.1617 ha.

Pilar and the DReAMS Project

The Municipality of Pilar has been a Poverty Database Monitoring System (PDMS) user since 2004. Resurveys were conducted in both 2007 and 2010. Pilar was chosen as one of the six pilot Municipalities in Bohol, representing “Bohol Integrated Area Development (BIAD) 5” within the European-Union funded DReAMS Project. BIAD 5 is a cluster of eight municipalities located in the interior part of Bohol. PDMS and *eco*BUDGET are two separate tools which the DReAMS Project intends to integrate to enhance the local capabilities of the Municipality in poverty reduction and environmental management.

PDMS has been used by the municipality to monitor the rate of poverty among the 21 barangays. Since 2004, the data has been updated every three years (the succeeding surveys were conducted in 2007 and 2010). 12 indicators were used in the first and second survey while in the third survey a total of 19 indicators were used, including the introduction of Asset-Based Community Development (ABCD) data gathering in which all the natural, physical, intellectual, social, cultural and human assets are identified in terms of quantities and locations.

In 2010, the municipality was identified as one of the partners in the DReAMS Project. It was also the year that the first Environmental Master Budget was formulated. The latest update of the budget was carried out in 2012, with revised targets set for 2013 to 2016. In 2010, the Local Implementing Team (LIT) conducted a workshop to analyse the possible causes and effects of every indicator in the PDMS survey. The workshop looked at environmental indicators and identified problems with environmental-related issues.

Using results from the causes and effects matrix, the Municipality identified priority environmental issues and recommendations to address the problems

identified in the PDMS. This data has been used in the formulation of the Local Environmental Master Budget to identify and measure the performance of the proposed programmes, projects and activities that will address both poverty and environmental problems.

With the presence of representatives from various programmes, projects and activities, the LIT proceeded to prioritise the Master Budget through a voting exercise participated in by all members present. The Local Government Unit (LGU) then decided to choose a catalyst project that would address two or more problems identified in the PDMS as well as address environmental issues prioritised in the *eco*BUDGET.

Project Implementation

The municipality, through the recommendation of the LIT, selected the construction of Small Farm Reservoirs (SFR) as the catalyst project. The project, which is aimed at reducing poverty, intends to address different issues and concerns, while at the same time providing a mechanism for environmental sustainability. The reservoir is designed to hold water during rainy days and gradually release it to the farm according to the farmers’ requirements for crops production, in order to help them gain more household income.

Through the PDMS data, potential beneficiaries have been identified and prioritised based on their degree of deprivation. The beneficiaries’ assets are taken into account, including land and farm availability and whether it is owned, tenanted, or rented by the farmer. Validation of site suitability has been jointly conducted by the office of the Municipal Agriculturist and Municipal Engineers.

Other key partners in the project include the farmers association in the local community, who assist with site validation together with the Barangay Farmers Technicians (BAFTECH), who directly monitor the farm activities of every 25 households. Institutional partners generally include national government agencies, particularly the Department of Agriculture, Department of Agrarian Reform, Department of Social Welfare and Development and Provincial Government of Bohol for institutional strengthening and capacity development of the potential farmer beneficiaries.

The majority of the project funds go towards financing the infrastructure component of the project. This has been supported by the Department of

Agriculture through the local field office, the Bohol Agricultural Promotion Centre (BAPC), which facilitated the release of four million pesos (P4,600,000) for the construction of 150 units of Small Farm Reservoir (SFR) evenly distributed in those upland barangays without irrigation facilities.

The Municipal Government of Pilar provides all the necessary technical assistance required, starting from planning, resource mobilisation, fund management, provision of a local counterpart, project implementation, monitoring and evaluation. Institutional support has been jointly provided by the municipal and barangay government, with technical assistance from various national government agencies.

Following the completion of the project, it will be turned-over to the farmer beneficiaries who shall have immediate responsibility for its management, maintenance and sustainability. BAFTECH shall oversee and conduct direct monitoring of the farmers' activities and render periodic reports to the office of the Municipal Agriculturist. The Farmers' Association will assist the farmer beneficiaries in accessing assistance and other input. Both the *eco*BUDGET and Farmers' Association presidents shall attend joint monthly meetings to discuss updates, problems encountered and other issues and concerns related to the utilisation and sustainable use of the project.

Results of the *eco*BUDGET Implementation

- Formulated and regularly updated the Environmental Master Budget.
- Constructed 150 units of Small Farm Reservoirs (SFR).
- Increased area of irrigated Riceland by about 312.60 hectares.
- Increased the volume of rice production by a minimum of 525.18 metric tons per year.
- Increased the income of farmer beneficiaries by an average of P 30,240 - equivalent to a 30.43% increase in income per year.
- Enhanced business activities in rice trading by about 472.67 metric tons of rice and 345.7 metric tons of milled clean rice.
- Increased volume of industrial milling by about 525.18 metric tons per year and milling income by about P525,180.

- Generated local and seasonal employment through farm-related activities for 6,354 persons per cropping season, primarily from production, harvest and post production activities.
- Provided mitigation and adaptation to climate change through the presence of farm reservoirs.
- Increased livelihood opportunities by enabling farmers to engage in inland fishing by raising genetically improved tilapia, or through engaging in duck raising using the SFR.
- Increased areas devoted to vegetable production through the availability of water supply from the SFR.
- Reduced the volume of soil erosion, preventing the abrupt release of water during rainy days – instead it is stored in the SFR and slowly released during sunny days.
- Reduced the volume of siltation in the man-made lake Malinao Dam, and other water bodies, thanks to controlled soil erosion.
- The Municipality was recognised by the Department of Agriculture with the National Rice Achiever Award. The award was given in both 2011 and 2012, along with a cash incentive of one million pesos (P1,000,000). This was partly as a result of implementing the catalyst project on SFR in 2010, 2011 and 2012, resulting in a higher yield and increased production.

Key Success Factors

- Integration of the PDMS and *eco*BUDGET as planning and monitoring tools for sustainable development.
- Strong political will, support and commitment.
- Institutionalised partnership with citizen organisations (e.g. the Farmers' Association) and community volunteers (e.g. Barangay Farmer Technicians).
- Strong collaboration among barangay, municipal, provincial and national government agencies.
- Strong support from both the Executive and Legislative branches of the local government.

Key Challenges

- 🌱 Increasing awareness of soil and water conservation technologies among farmers and other stakeholders, and helping them to adapt.
- 🌱 Prioritising more fund allocation for interventions addressing both economic and environmental issues and concerns.
- 🌱 Creating a mind-shift among farmers, moving from traditional farming practices towards new and modern farm technologies to increase production without sacrificing the environment (environmentally-friendly technologies).
- 🌱 Promoting the *eco*BUDGET programme to the new local administration and implementing it at the barangay level.
- 🌱 Enacting legislative measures to create and support programmes, projects, activities and new initiatives promoting economic and environmental sustainability.
- 🌱 Ensuring the continuous support among citizen organisations, community volunteers and various non-government and governmental institutions.

Lessons Learned

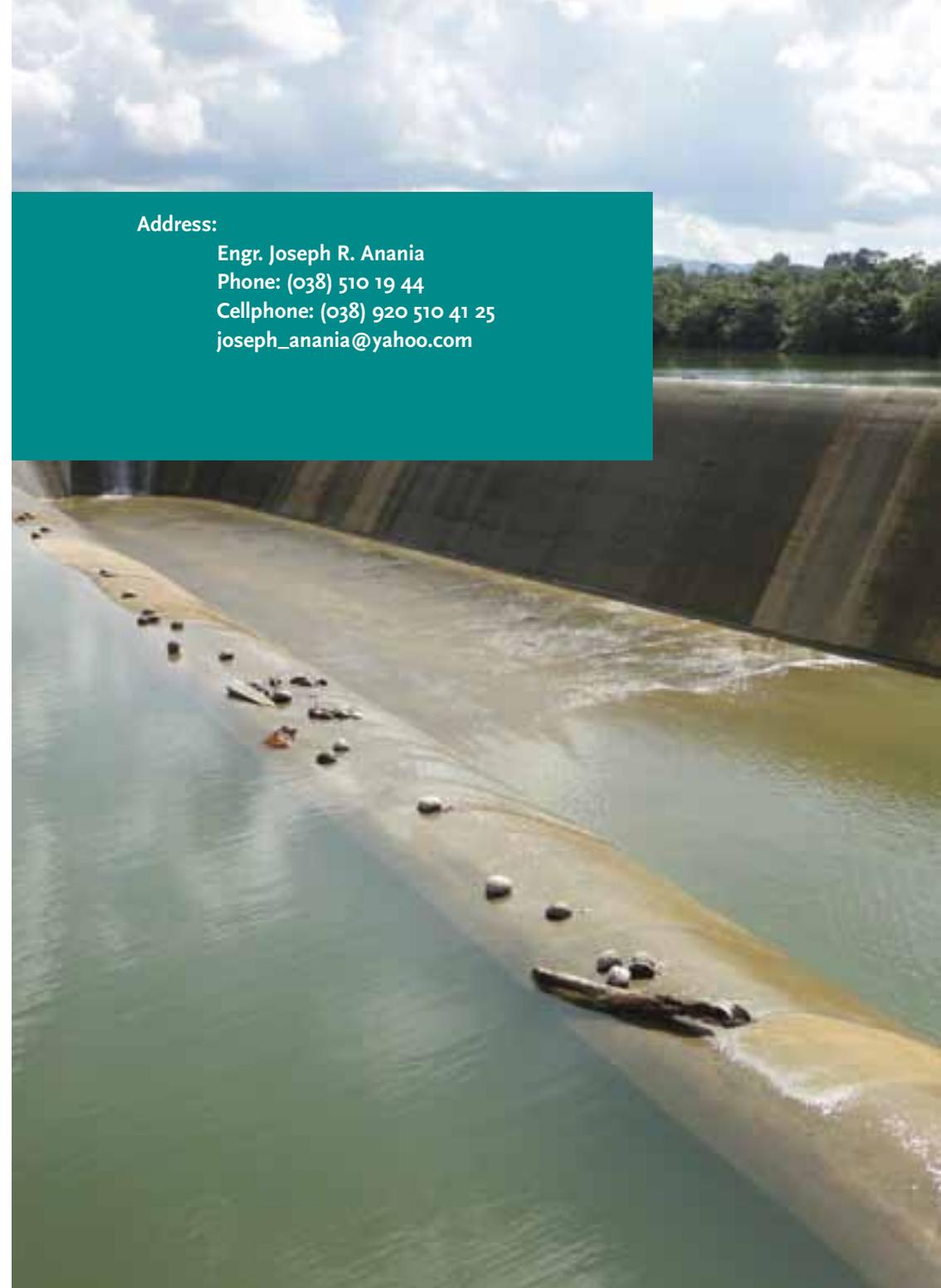
- 🌱 Clear identification of environmental issues and concerns leading to specific identification of effective measures and initiatives.
- 🌱 Strong participation of citizen organisations and community volunteers/workers ensures more success in implementing projects, programmes and activities.
- 🌱 Annual review and updating of plans and programmes helps to guide improvement and enables success in the planning periods.
- 🌱 Integration of PDMS and *eco*BUDGET is an effective tool that provides first hand information leading to the formulation of concrete plans and wise decisions.

Plans for the Future

The municipality plans to keep PDMS and other similar tools introduced by the national government agencies in use, as well as to integrate *eco*BUDGET into the Municipality. The tools will also be used at barangay level whenever possible. Both PDMS and *eco*BUDGET will continue to help in aligning programmes to address poverty and improve environmental sustainability.

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Awareness of the situation within marine, coastal and upland areas was improved through the Environmental Master Budget.

CASE STUDY OF *eco*BUDGET IMPLEMENTATION IN

TALIBON (PHILIPPINES)



Background Information on Talibon

Talibon is one of the fastest growing municipalities in the entire province of Bohol. It was the first town to become a “first class” municipality. Its strategic location is one of the factors that helped its economy to grow - its proximity to Cebu and Leyte in the region is greatly advantageous economically. It is located in the north-eastern part of the island. There are 25 barangays (administrative division in the Philippines). Talibon is divided into three clusters, eight island barangays, 11 coastal barangays and 6 inland barangays.

The primary means of livelihood of the people is farming and fishing, (Talibon is an agriculturally based area). It has an estimated population of 65,000 and an income of over 100 million pesos per annum, with this figure still growing. Politically, its main concern is to alleviate poverty by developing strategies to improve economic conditions and environmental consciousness, which will lead to sustainable development. There is great potential to develop a tourism industry, especially in the inland area and coastal area, as it lies within the Danajon Bank - a double barrier reef that is unique in Asia and one of three of its kind in the world.

Talibon and *eco*BUDGET

*eco*BUDGET was introduced to Talibon after a successful implementation in Tubigon. It has been expanded to five municipalities through the Provincial Government of Bohol. The tool extended technical assistance in terms of identifying environmental projects that have an impact on resource management, poverty alleviation, health and sanitation, and revenue generation in terms of achieving sustainable development. It has improved the capacity of the Local Government Unit (LGU) to track down environmental projects and to plan and evaluate progress in development.

There was also a convergence of several departments in the LGU in such a way that each relevant section of the *eco*BUDGET tool was assigned to the proper office in which it could be best implemented, i.e. the office that is in charge of the sector to be addressed by the project. A technical working group was created through an executive order which is composed of the Municipal Planning and Development Coordinator, Municipal Health Officer, Municipal Agriculturist, Municipal Engineer, Municipal Social Welfare and Development, and a representative from a non-government organisation (NGO). The engagement was strengthened and institutionalised by a resolution of acceptance and a memorandum of agreement to implement the project.

Results of the *eco*BUDGET Implementation

The LGU was able to accomplish the following:

- Come up with a systematised data collection, supporting the creation of a basic data set that was previously missing;
- Enable the creation of a system for monitoring and evaluation of on-going and completed projects in various sectors;
- Measure the performance and management system of the LGU;
- Empowered communities by advocating transparency, accountability and participation in any undertakings;
- Enhanced awareness through strengthened IEC; and
- Taught the LGU of a new approach in attaining sustainable development, enhancing its own resources.

Key Findings

The introduction of *eco*BUDGET provided the municipality with a tool for assessing its natural resources in terms of figurative data. Knowing the impact brought about by the rapid economic development allows the LGU to formulate the proper approach in dealing with its effects, beneficial to environment sustainability or the otherwise. Awareness of the situation within marine, coastal and upland areas was improved through the Environment Master Budget. Hence, prioritisations of projects are now more easily identified, with clarity and reliability.



Lesson Learned

Throughout the implementation of the *eco*BUDGET project, the LGU learned the following lessons:

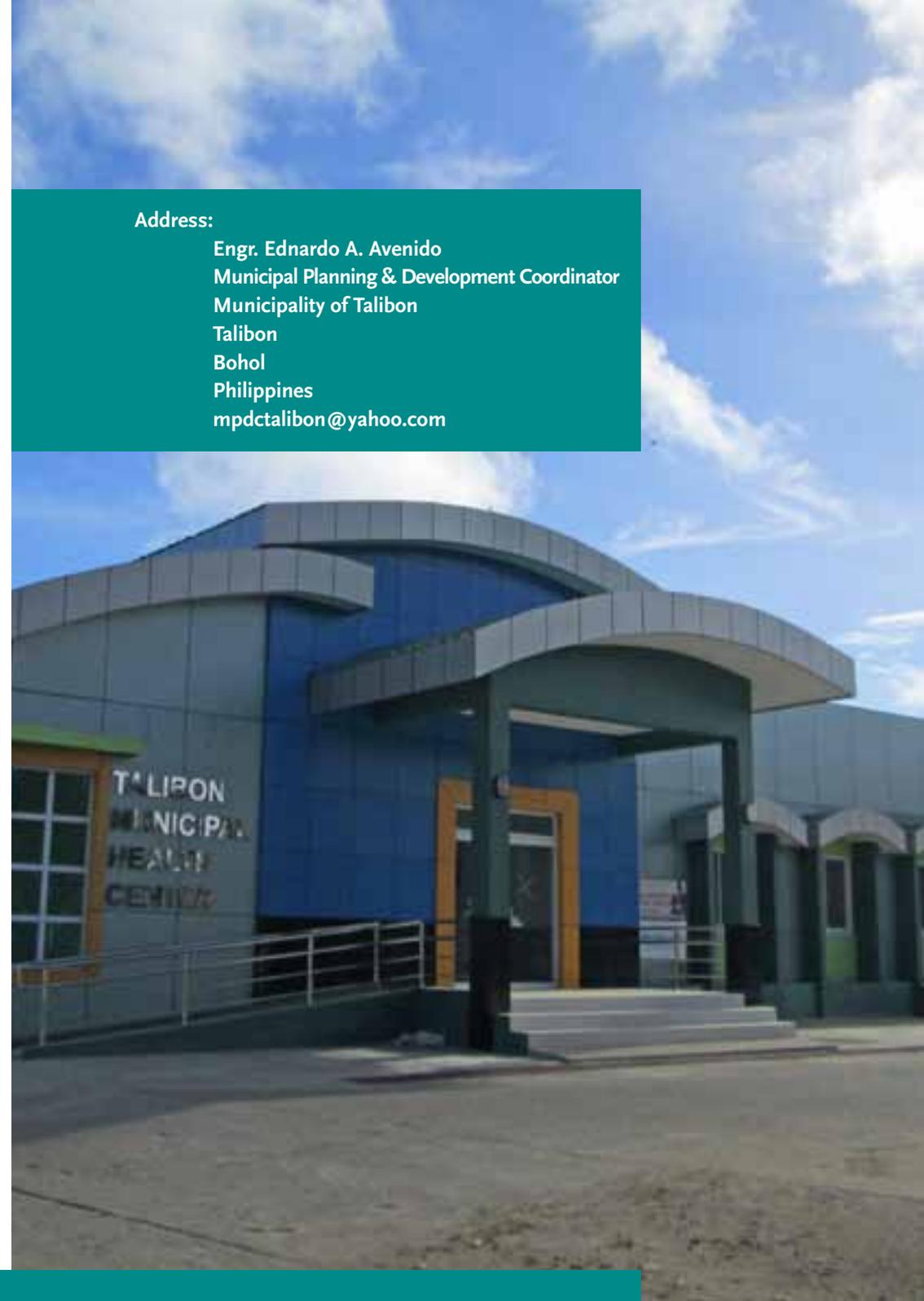
- 🌱 The value of harmonious coordination and partnership among all stakeholders and the LGU;
- 🌱 The value of clear and credible data with appropriate analysis on addressing environmental issues and concerns;
- 🌱 The value of systematic approaches, particularly regarding the concept of management and sustainability in dealing with environmental issues;
- 🌱 The value of proper information as it uplifts the awareness and induces involvement to the concerned parties.

Replication of *eco*BUDGET in other municipalities

The *eco*BUDGET project has introduced systems and approaches essential to the management and sustainability of environmental resources within the municipality. Its monitoring and evaluation tool provides the LGU with a specific quantitative value on the effects of everyday utilisation of environmental resources. The LGU have created an office (Municipal Poverty Reduction Action Office) solely responsible for monitoring and evaluating all implemented projects. The office uses the Poverty Database Monitoring System (PDMS) in identifying its probable project beneficiaries.

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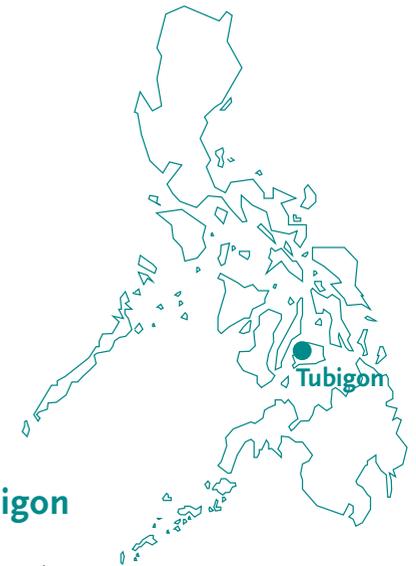




Integration of action plans, measures and the management of activities and initiatives related to ecoBudget into the municipal services' work plan ensures that funds are allocated for their implementation and sustainability;

CASE STUDY OF *eco*BUDGET IMPLEMENTATION IN

TUBIGON (PHILIPPINES)



Background Information on Tubigon

The municipality of Tubigon, established in 1819, is located along the northeastern coast of the Province of Bohol. It is 54 kilometers from the capital city of Tagbilaran via the Tagbilaran North Road and 21 nautical miles south of Cebu City. It is bounded on the east by the municipality of Clarin, on the south by the municipality of San Isidro and Catigbian, on the west by the municipality of Calape and on the north by the Bohol Strait. The municipality has a total land area of 8,186.96 hectares. It has 34 barangays, 12 of which are coastal while six are island barangays. Areas classified for agricultural use comprise the biggest portion of the municipality with a total area of 5,139.4 hectares or 62.78 percent of total land area. The built-up areas comprise 423.1 hectares or 5.17 percent. Other uses are agro-forestry, 1,744.2 hectares; industrial use, 347.9 hectares; tourism, 17.3 hectares; solid waste disposal, 17.3 hectares; and mangrove area, 497.6 hectares.

Tubigon and *eco*BUDGET

The municipality of Tubigon, being a PDMS user since 2004 and having been involved with the 2005 *eco*BUDGET project before, was chosen as one of the six pilot municipalities in Bohol that became partners of the Realising DR*e*AMS project (2010) funded by the European Union. The DR*e*AMS project intends to integrate the PDMS and *eco*BUDGET tools in improving the capacity of local authorities in environmental management and poverty reduction.

PDMS is used as a tracking tool to monitor the poverty incidence in the municipality using 12 poverty indicators in all 34 barangays. The first household poverty survey was done in 2004 and resurveys in 2007 and 2010. The LGU intends to update the database every three years.

Another management tool used by the municipality is one for its environmental management. It is a framework tool introduced in Tubigon in 2005 through the *eco*BUDGET project. The first Environmental Master Budget was formulated then with its 2004 baseline data set as the reference year value.

Since 2006, Tubigon continues to implement and monitor progress of its Environmental Master Budgets with an annual review of its targets. The latest revision of the Environmental Master Budget took place in 2010 with the updating of the targets for 2011. The updated targets included an additional environmental issue that can be linked to the PDMS poverty indicators, i.e., water for irrigation under the water supply issue.

The Local Implementing Team (LIT), organized in 2005 during the first *eco*BUDGET project, convened in the last quarter of 2010 to review the municipal annual targets for CY 2011 of the Environmental Master Budget and to discuss the linking of the *eco*BUDGET and PDMS indicators. The team used ranking-based assessment to come up with top common issues using the poverty indicators of PDMS and ranked the barangays according to their levels of deprivation. The top common issues that came out were matched with environmental initiatives that have common agenda and objectives, i.e., to increase household income.

The assessment of both *eco*BUDGET and PDMS tools showed that interventions designed to address both poverty (in the case of PDMS) and environmental (in the case of *eco*BUDGET) issues and concerns have similar, and in some cases overlapping, objectives, i.e., interventions to address low household income.

An example of which was the construction of small water impounding and mini diversion dam/canal. The said projects not only helped the farmers economically through increased productivity but were also environmentally helpful since by utilizing the water resource from the rivers this induced the formation of micro habitat and naturally replenished the surface waters and aquifer. This information became the basis for the selection of interventions or initiatives for priority catalyst projects of the LGU.

Project Implementation

The selection of the LGU's catalyst project, i.e. Construction and Rehabilitation of Mini-Diversion Dams, was recommended by the Local Implementing Team (LIT) because the intervention could be designed to address issues and concerns for both poverty reduction and environmental sustainability. The project addresses optimum utilization of a water resource for use in agricultural production and addresses poverty issues with regard to low household income, particularly for farming communities.

With the available data, the municipality included the construction of micro-impounding or diversion dams in its priority development agenda especially designed for the marginal farmers in the highland barangays who till rain-fed rice farms.

The twin goals of the project are to address both environmental and poverty issues by optimum utilization of water resource for agricultural production. The idea is to provide an irrigation facility for the marginalized farmers by making use of the municipality's environmental asset particularly water from the rivers. The water resource from rivers is utilized to irrigate farmlands before it gushes forth to the catch basin or to the sea. With sufficient supply of water for irrigation it is expected that agricultural outputs will increase and this will hopefully result in increased household incomes.

The key partners involved in the project are the community-based partners, the non-government organizations (NGOs), and the government institutional partners. The community-based partners refer to the people's organizations (PO) or farmers associations and are mainly the farmer-beneficiaries of the project. The NGOs are the ones who usually provide technical assistance and other resources to develop and enhance PO capacities. The institutional

partners refer mainly to the proponents, i.e. the LGU, the barangay officials of the project site, and other national agencies coordinating the project.

As project proponent, the role of the LGU starts from the project planning then financing, project implementation, and monitoring and evaluation. Strengthening the capacities of PO-beneficiaries is also part of the responsibility of the proponent with the assistance and support from the barangay officials and other NGOs supporting the project. Once the project has been turned-over to the PO-beneficiaries, part of their duty is the management, maintenance, and sustainability of the project. They would also conduct periodic meetings and report project updates to the municipal government, particularly through the Municipal Agriculture Office (MAO).



Results of the *eco*BUDGET Implementation

The LGU was able to accomplish the following:

- 🌱 Capacity of farmer-beneficiaries to manage a project was enhanced;
- 🌱 Increase in the total area of irrigated rice fields;
- 🌱 Increase in the volume of agricultural production by an average of 10 percent per hectare and increase in production cycle (from one cropping to two cropping seasons per year);
- 🌱 Increase in farmers' income and household food supply;
- 🌱 Promote economic activity (farm activity-related employment); and
- 🌱 Sustainable utilization of water resource for irrigation.

Key Success Factors

- 🌱 Integration of project initiatives in the LGU development agenda;
- 🌱 Strong political commitment and support (project buy-in);
- 🌱 Strong networking with development partners and stakeholders; and
- 🌱 Utilization of PDMS and *eco*BUDGET tools and information as baseline data

Key Challenges

- 🌱 Changing the mindset and traditional culture of farmers to adapt sustainable farming technologies (e.g. development and use of locally adapted farmer varieties of seeds; practice organic farming);
- 🌱 Ensuring long-term commitment of beneficiaries to the project and related initiatives;
- 🌱 Promoting the *eco*BUDGET program and initiatives to the community; and
- 🌱 Enactment of appropriate policies and initiatives to create a balance between environmental sustainability and economic development.

Lessons Learned

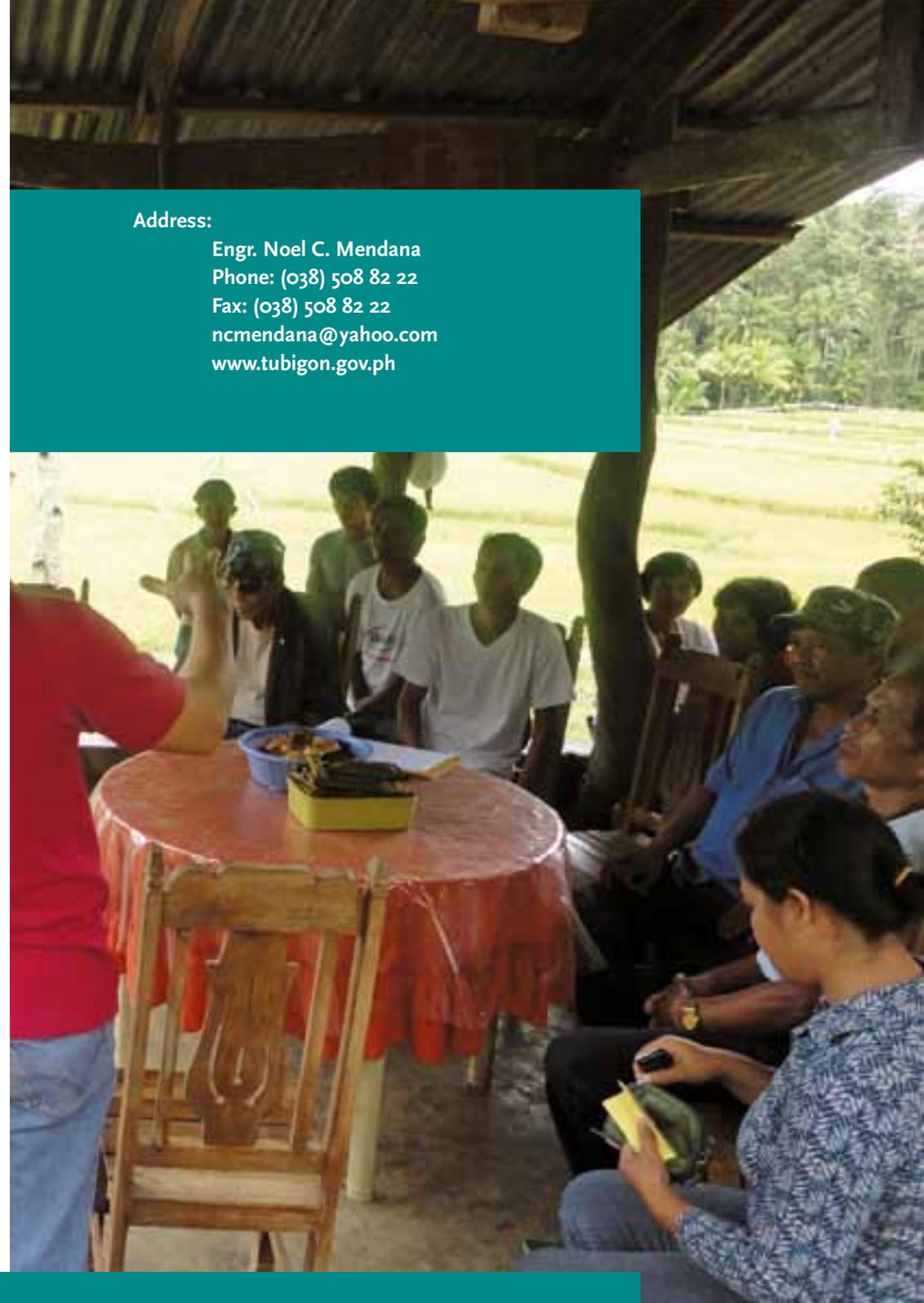
- ☺ Integration of action plans, measures and the management of activities and initiatives related to *eco*BUDGET into the municipal services' work plan ensures that funds are allocated for their implementation and sustainability;
- ☺ Annual audit and review of achievements and objectives promotes transparency and accountability; and
- ☺ Enabling the local authorities to obtain first-hand information of the different projects and activities which ultimately enable them to make "informed decisions".

Plans for the Future

The local government will continue to improve the PDMS and *eco*BUDGET tools and the linking of both to encourage and promote development of other catalyst projects that will address both economic and environmental concerns and issues. The LGU would as well ensure enhancement of its measures in project developments, implementation, and monitoring for the sustainable integration of the two tools.

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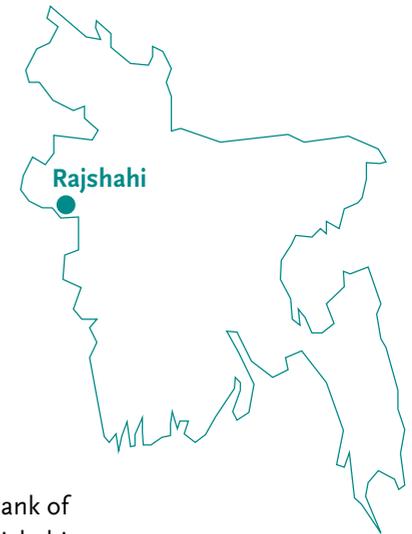




The implementation of ecoBUDGET had a considerable effect on water resources, sanitation and health in the city of Rajshahi. ecoBUDGET Master Budget helped identify urgent issues and helped tackle them in a structured and transparent way.

CASE STUDY OF *eco*BUDGET IMPLEMENTATION IN

RAJSHAHI (BANGLADESH)



Background Information on Rajshahi

The City of Rajshahi is situated on the north bank of river Padma and is the headquarters of the Rajshahi Administrative Division of Bangladesh. It has a population of 763,952 inhabitants and is spread over an area of 93.6 km². There are many slums in the city, with almost 20% of the population residing there. Rajshahi is a renowned centre of excellence for education as it hosts a large number of educational institutions. Therefore, it is often referred to as the Education City of Bangladesh. A variety of religions such as Islam, Hinduism and Christianity peacefully co-exist in the city. Social and communal harmony among people, friendly politics and economic well being further strengthen a peaceful life. As it is the place where Rajshahi silk originally comes from, the city also has the name “Silk City”.

Established in 1876, Rajshahi Municipality is one of the first municipalities in Bangladesh . It was renamed as Rajshahi Pourashabha or Municipal Corporation in 1987, and was finally named Rajshahi City Corporation (RCC) in 1992. Besides the City Corporation, the Rajshahi Unnayan Kortripokhko (Rajshahi Development Authority or RDA) is responsible for planning the development of the city and for coordinating all development related work.

Rajshahi and *eco*BUDGET

The RCC adopted its first *eco*BUDGET Master Budget in 2010 under the Realising DRAMS project. The Master Budget indicators and targets were largely based on the “Mayor’s City Vision of 2018”. An *eco*BUDGET implementation team was set up to implement the activities under the Master Budget.

The Local Implementation Team consisted of members from:

1. Make Rajshahi City Green Committee
2. Engineering Department
3. Health Department
4. Water Supply Department
5. Conservancy Department
6. Forest Department

The draft Master Budget was presented to the city Council and ratified in December 2010. Seven environmental issues were selected in the Master Budget and measurable indicators were identified for each of these issues.

The issues in the Master Budget include:

1. Water Resource

- a. Increased water supply for households
- b. Reduction in non revenue water
- c. Focus on rain water harvesting

2. Sanitation

- a. Decrease in number of septic tank outlets in drains
- b. Increased community based collection of waste
- c. Better coverage of toilets, with 100% coverage planned for 2015.

3. Green growth

- a. Increase the green cover of the city

4. Health

- a. Decreased percentage of water borne disease patients
- b. Increased immunisation rates of children and pregnant women

5. Solid waste

- a. Solid waste collection at night
- b. Focus on segregation and processing of solid waste

- c. Awareness programmes in schools and markets

6. Energy conservation

- a. Use of energy saving devices in houses, offices and streets

7. Transportation

- a. Sustainable transportation system for the city

The Corporation has set short and long term targets for these indicators on the basis of the current baseline value of indicators and the long term vision for the city. These are being monitored with the help of the *eco*BUDGET Master Budget.

Results of the *eco*BUDGET Implementation

The implementation of *eco*BUDGET had a considerable effect on water resources, sanitation and health in the city of Rajshahi. With regard to water resources, Rajshahi aimed to supply 65% of households with safe and potable drinking water by 2012. This target was included in the Master Budget. In order to attain this, several measures, such as the installation of reservoirs and the improvement of pipelines, were implemented. These in turn led to an impressive outcome: by the end of 2012, 72% of the households in Rajshahi had access to potable water.

When it comes to reducing the loss of water, the RCC has been less successful. The target of 30% was not reached, with currently only 2% achieved. Since water scarcity is a serious issue, the RCC started to increase its activities in the field of rain water harvesting.

In order to fight further water pollution, RCC decreased the number of septic tank outlets in the surrounding rivers. In addition, the local population was included in a community based waste collection programme. *eco*BUDGET also helped to increase the amount of toilets in poor areas. Before the introduction of *eco*BUDGET only 10% of households in Rajshahi city had access to toilets. This figure was marginally increased by the construction of 350 toilets by the RCC.

In the field of health, the Master Budget set a target for the immunisation of pregnant women and children. This target was tackled by issuing a massive vaccination programme, reaching out to more than 7,000 children and 17,000 pregnant women.

The *eco*BUDGET Master Budget helped identify urgent issues and helped tackle them in a structured and transparent way.

Key Findings / Lessons learned

The implementation of the *eco*BUDGET Master Budget in the city faced several challenges, both large and small, during the project period.

Although the project received full support from the political wing of the Rajshahi City Corporation, it was observed that collaborating on common issues between different departments of the RCC was not easy. This however was gradually overcome by regular meetings and discussions among both administrative and political divisions. It is important to have a separate office which will take care of the implementation of the *eco*BUDGET Master Budget even after the duration of the project.

The Master Budget indicators should be presented in the Council meetings to make the political wing of the Municipal Corporation aware of the improvements, and also serve as a monitoring body for the administration.

One of the major challenges faced by the local authorities was the lack of availability of baseline information in the local authorities regarding several socio-environmental issues that they were keen to work on. Rajshahi city wanted to monitor the immunisation of pregnant women and children, but this data was not readily available from the City Corporation. However, the project helped the City Corporation to collect such information from the relevant government department and facilitated interdepartmental communication.

The City Corporation also chose a wide range of environmental indicators which were monitored through the Master Budget, which meant collaboration among different departments was necessary. It was felt that a limited number of indicators over which the corporation had greater control Master Budget would enhance monitoring and assessment within the Master Budget.

How is *eco*BUDGET funded in Rajshahi

The Environmental Master Budget was based on the interest and focus of the Mayor and his Council regarding development in the city. Most of the indicators chosen were from the Mayor's Vision 2018, which shows the path of development in Rajshahi City as envisaged by the Mayor. As a result, the Master Budget indicators were linked to existing, ongoing or proposed governmental schemes which could fund the activities that led to the achievement of the targets set. This was also an example of the commitment of the local body to the whole process.

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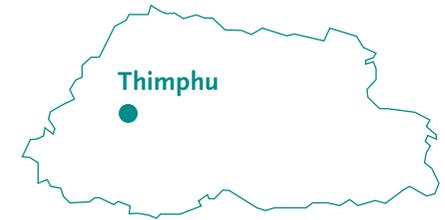




In terms of the supply of potable drinking water, ecoBUDGET led to positive changes. After the introduction of ecoBUDGET, the potable drinking water supply for households increased by 45%.

CASE STUDY OF *ecoBUDGET* IMPLEMENTATION IN

THIMPHU (BHUTAN)



Background Information on Thimphu

Thimphu is the capital of Bhutan. The city has an area of 26 km² and is 15 km long and 3 km wide. It is situated along the Wangchu river and has a total population of 79,185 (PHCB 2006), which is more than 40% of the entire urban population of Bhutan. The population density of the city is around 3,030 per km². Thimphu is a political and economic centre of Bhutan. Its economy is heavily dominated by agriculture and livestock. Tourism is a major contributor to the local economy, but is strictly regulated to maintain a balance between traditional and modern lifestyles.

Thimphu Municipal Corporation (TMC) was established in 1995 through a royal decree. It became an autonomous corporation in 1999, following the enactment of the Municipal Act of 1999. With the democratic process introduced to the country, Thimphu Thromde is now managed and guided by the City Council with an elected Mayor (Thrompon) and seven councillors (Thumis). The Mayor acts as the Chairman of the Council and the Executive Secretary acts as the Member Secretary. The mandate of Thimphu Thromde is to provide efficient and effective services to the residents, commensurate with the growth of the city, and to ensure that development occurs in a planned and harmonious manner.

Thimphu and *eco*BUDGET

Thimphu adopted its first *eco*BUDGET Master Budget under the Realising DR ϵ AMS project in 2010 when the Local Implementation Team in Thimphu Thromde presented the project and the draft Master Budget to the 92nd City Committee Meeting for ratification. The City Council ratified all activities under the project. The Local Implementation Team consisted of the following officers:

1. Mr Geley Norbu, Chief Environment Officer (Advisor to DR ϵ AMS project), Thimphu Thromde
2. Yangchen Dekar, Project Support Officer, Thimphu Thromde
3. Sonam Denkar, Project Support Officer, Thimphu Thromde
4. Shera Doelkar, Forestry Officer, City Beautification and Urban Forestry Section, Thimphu Thromde
5. Tshewang Lhamo, Accounts Officer, Thimphu Thromde
6. Dorji Zangmo, IT Associate, Thimphu Thromde
7. Dorji Rabten, Human Resources Officer, Thimphu Thromde
8. Kuenzang Choden, Assistant Revenue Officer, Thimphu Thromde
9. Jigme Wangmo, Assistant Land Record Officer, Thimphu Thromde
10. Tshering Yangchen, Environment Officer (Project Manager for DR ϵ AMS), Thimphu Thromde

Five environmental issues were chosen to be implemented as part of the Master Budget implementation and indicators were selected for each of these issues which could be monitored by the *eco*BUDGET tool. The issues include:

1) Solid waste

- a. Reduction in the amount of waste received at landfill sites
- b. Segregation of waste at source
- c. Increase the amount of organic waste for compost.
- d. Reduce the amount of oil waste entering the river

2) Water Resource

- a. Increase number of parameters tested for water quality
- b. Increase number of households with continuous water supply
- c. Monitoring of unaccounted loss of water

3) Health

- a. Reduce the number of diseases caused by an unhealthy lifestyle
- b. Reduce the number of stray dogs

4) Biodiversity and ecosystem

- a. Increase in number of green areas
- b. Protection of biodiversity

5) Transportation

- a. Increase in number of electric cars in the city

For each of these indicators chosen, Thimphu Thromde set short-term and long-term targets on the basis of the current or baseline value of the indicators. Each activity was reported and monitored throughout the two year period that the tool was implemented.

Results of the *eco*BUDGET Implementation

In order to monitor the issues named above a number of indicators were selected and compiled in the Master Budget. In the area of water resources, some changes were introduced through *eco*BUDGET. Before, eight parameters for drinking water were monitored, including colour, conductivity, temperature, hardness and others. While identifying water quality and quantity as a priority, a new monitoring parameter was introduced: Faecal coliform bacteria in the water. In terms of the supply of potable drinking water, *eco*BUDGET led to positive changes. After the introduction of *eco*BUDGET, the potable drinking water supply for households increased by 45%.

In the area of health, Thimphu aims to reduce the number of diseases caused by an unhealthy lifestyle, as well as the number of stray dogs. Measures for both of these aims were implemented and the Master Budget showed the impressive achievements that were made concerning stray dogs. An expansive dog sterilisation programme showed impressive result: the stray dog population was reduced by up to 22 percent, thereby exceeding the 10 percent target set in the Master Budget.

All in all, *eco*BUDGET helped Thimphu to properly implement and monitor relevant indicators. The Master Budget clearly showed improvements and thereby motivated stakeholders to try even harder to reach the targets set.

Key Findings/Lessons learned

It was observed that in the initial stages it was difficult to select important environmental issues, since all of them impacted upon one or more aspects of life in the city. As a result, Thimphu Thromde selected a large number of environmental issues and indicators for monitoring under *eco*BUDGET. However, as the reporting continued, it was felt that some of these indicators should be reduced, in order to bring the Master Budget to a more manageable level. Although all indicators selected initially were reported on, it would be more feasible to have a limited number of indicators in the Master Budget and increase or change them gradually.

It was also observed that a number of environmental issues were under the purview of other governmental bodies, and not directly controlled by the municipal body. It was therefore difficult for Thimphu Thromde to report on these indicators. Such indicators need to be avoided, or better collaboration between different departments created and maintained.

The officials of Thimphu Thromde received full support from their Mayor and Council. They communicated with their Council at each stage of the project and informed them of all the activities being undertaken by Thimphu Thromde. This facilitated the successful implementation of the project to a great deal, and also brought popular support to the project activities. It is important to have a separate office that will take care of the implementation of the *eco*BUDGET Master Budget, even after the duration of the project.

The Master Budget indicators should be presented in the Council meetings to make the political wing of the Municipal Corporation aware of the improvements, and also serve as a monitoring body for the administration.

How is *eco*BUDGET funded in Thimphu

The environmental Master Budget was closely linked to the existing, ongoing and proposed schemes of the local government. The indicators and issues chosen were such that they were the focus of development of Thimphu City and were recognised as important by both the political wing and the administrative wing of the Thimphu Thromde.

As a result, most of the activities undertaken to achieve the targets set in the Master Budget were funded by government funds, either from the Royal Government of Bhutan or by the local body itself.

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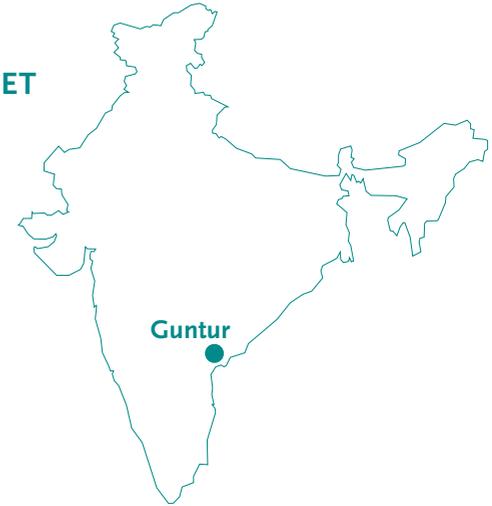




ecoBUDGET not only helped the Guntur Municipal Corporation to improve the environmental quality of the city, but also helped to improve the living standards of the urban poor.

CASE STUDY OF *eco*BUDGET IMPLEMENTATION IN

GUNTUR (INDIA)



Background Information on Guntur

Guntur is the fourth largest city in the southern state of Andhra Pradesh in India and serves as the district headquarters. It has an area of 168.41 km² divided into 52 wards with a population of above 600,000. It is located about 270 kilometres southeast of Hyderabad. It is an important educational, political and commercial centre in the district. Agricultural trade in chillies, cotton and tobacco form a significant portion of the urban economy.

The Guntur Municipal Council, constituted in 1887, was upgraded to a Municipal Corporation in the year 1994. Throughout 2012 the limits of the Guntur Municipal Corporation have been expanded by merging 10 surrounding villages into the corporation.

Guntur and *eco*BUDGET

Guntur Municipal Corporation (GMC) has been using *eco*BUDGET since 2006, when the first Master Budget was formulated with indicators and targets set for five major environmental issues:

-  water quality
-  water quantity
-  green city
-  waste management
-  air quality

Under the Realising DR*e*AMS project, GMC acted as a regional lighthouse city to support the newer pilot cities of Rajshahi (Bangladesh) and Thimphu (Bhutan) in using *eco*BUDGET. In the project, the GMC reviewed and revised the Master Budget, modifying old targets and adding new ones. The project also introduced GMC to the PDMS software, which will be used along with *eco*BUDGET to plan poverty reduction schemes to help the urban poor in the city. Representatives of GMC visited the pilot cities to share their experiences in using *eco*BUDGET and promote peer to peer knowledge sharing.

In order to execute *eco*BUDGET properly, a variety of municipal officials including executive engineers, assistant engineers, project officers (urban poverty alleviation), town planning supervisors, sanitary workers etc. were involved in the implementation of *eco*BUDGET. The project received support from the Mayor as the political head, as well as the Municipal Commissioner and the administrative head. A stakeholder committee was also set up for monitoring the *eco*BUDGET result. The committee members were represented by renowned NGOs (such as Loksatta and the Rate payer association), professors and industrialists. Under the DR*e*AMS project, the GMC ratified the *eco*BUDGET Master Budget in August 2010. Six environmental issues were selected as a part of the Master Budget implementation, and indicators identified to be monitored by the *eco*BUDGET Master Budget. This included the following:

1. Water Quality / Quantity:

- a. Increase in the number of parameters monitored and the frequency of monitoring
- b. Increased supply of drinking water per capita
- c. Increased number of households using rain water harvesting system

2. Waste Management:

- a. Increased percentage of waste collection and waste segregation in the city

3. Environment / Green area cover:

- a. Increase in total surface coverage of green areas
- b. Plantation with good survival rates of plants
- c. Increase in number of ponds and parks in the city
- d. Development of a biodiversity inventory in the city

4. Health (Slum development)

- a. Increase in the number of slums developed (in terms of physical / environmental and social elements)

5. Energy

- a. Energy conservation through solar lighting in parks and LED lights along streets

6. Education

- a. Percentage increase in annual indicators related to government schools, at both primary and senior levels

The GMC set short-term and long-term targets for these indicators, on the basis of available baseline values. Actions were identified in the City Corporation and undertaken to achieve the set targets for a period of two years, and the indicators were closely monitored. This was reported under the project in the Budget Balance, outlining targets achieved within the indicators.





Results of the *eco*BUDGET Implementation

The concept of *eco*BUDGET was introduced for the first time in South Asia within the City of Guntur, India. This is why Guntur was selected as regional light house, tasked with sharing its experience and knowledge with other South Asian cities through the DReAMS project. Guntur Municipal Corporation, with the help of ICLEI South Asia, organised training workshop in Thimphu and Rajshahi for knowledge sharing.

Improving water quality and quantity were among the priority issues for GMC, as water supply is the first basic urban service for which the GMC is responsible. It has been a priority issue since the first *eco*BUDGET Master Budget was formulated. Before implementation of the Master Budget, GMC was monitoring two parameters in drinking water supplied to households, namely residual chlorine and temperature. Now they conduct two analyses of 40 samples per day for four parameters, including Chlorine, Temperature, Hardness and pH.

Since its introduction in 2006, a number of indicators have been replaced, as either targets were met or new targets added due to PDMS being introduced through the DReAMS project. For example, GMC has adopted the Central Government scheme “Integrated Housing and Slum Development Programme” (IHSDP) with the objective of striving for holistic slum development. This includes creating a healthy and enabling urban environment by providing adequate shelter and basic infrastructure facilities, such as new houses for the poor, sanitation, water supply, roads, drainage, street lighting, sewerage etc. There are around 187 slum (133 notified and 54 non-notified) in Guntur Municipal Corporation. Up to this point, 48 slums have been developed under the IHSDP scheme. GMC has been planning to develop the remaining slums under the “Rajiv Awas Yojana” (RAY) project. *eco*BUDGET not only helped the Guntur Municipal Corporation to improve the environmental quality of the city, but also helped to improve the living standards of the urban poor.

Key Findings / Lessons learned

In Guntur, the implementation of the *eco*BUDGET Master Budget faced fewer challenges since they already had experience of implementing this tool and reporting on Master Budget indicators. However, an important challenge faced was the lack of personnel in the corporation who could devote enough time for monitoring the trend of the Master Budget indicators. This was solved to some extent by hiring a contractual employee who could gather and collate information from different departments and report to the administrative head in the corporation. It is therefore important to have a separate office that will take care of the implementation of the *eco*BUDGET Master Budget, even after the duration of the project.

The Master Budget indicators should be presented in the Council meetings to make the political wing of the Municipal Corporation aware of the improvements, and also serve as a monitoring body for the administration.

The Master Budget indicators chosen, although relevant for the city to monitor, included some indicators which were difficult to monitor such as the survival rates of planted trees.

In such cases, data collection was a challenge, and reported data from relevant departments of the corporation were taken to monitor the indicators.

How is *eco*BUDGET funded in Guntur

The environmental Master Budget was first introduced with support from the European Commission's Asia Urbs programme in Guntur City. The Realising DReAMS project was also an EU funded project, and the staff related expenses incurred by the local team in implementation of the project were covered by the funds provided by the EU. However, the Master Budget indicators were based on ongoing or proposed governmental schemes, and indicators chosen were dependent on the priorities of the government developmental schemes available. This ensured that the municipal corporation had sufficient funds allocated for the activities to be undertaken through the Master Budget. The Municipal Corporation also set aside funds in their budget for these activities.

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The environmental budget turned out to be a useful tool not only for technicians, but for the political level and city managers. It enables them to better administer and manage the urban area.

CASE STUDY OF *eco*BUDGET IMPLEMENTATION IN

BOLOGNA (ITALY)



Background Information on Bologna

The city of Bologna is located in the heart of Italy, between Milan and Florence, and is surrounded by beautiful plains, hills, woods and the Apennines. The Province spreads across 60 Municipalities and has a grand total of 927,820 inhabitants, of which 384,000 live in the city itself. Bologna is a historic city with a well-preserved historical city centre that is among the largest in Europe. The city is characterised by 40 kilometres of “porticoes” (the arcades), its red brick buildings and medieval towers. Besides its cultural and historic importance, Bologna is one of the most important commercial cities in Northern Italy and serves as a key transportation hub. Many medium-sized businesses and crafts, oriented towards international markets, are situated in the city. An anticipatory policy of public and social services as well as the construction of new facilities have improved the quality of life in Bologna and led to impressive economic developments in the postwar era. Another important factor is the readiness of Bologna’s administration to embrace advanced information and communication means. By doing so, the city was labelled a “digital city” with an ambitious administration that is committed to the simplification of processes and the improvement of

relations with citizens. These efforts are mirrored in Bologna's high ranking in the Legambiente report on the state of the environment in Italian cities and in the Sole24Ore survey on quality of life.

Bologna and *eco*BUDGET

In order to attain its ambitious environmental goals and safeguard its natural resources, the city of Bologna took part in the "European *eco*BUDGET" project in 2001. Four years later, after the successful implementation of *eco*BUDGET, the municipality was part of another project consortium, funded by the EU's AISA-URBS programme that exported *eco*BUDGET to Asia. Due to the positive experience had with *eco*BUDGET, it developed into one of the programming tools of the local administration.

After its introduction, *eco*BUDGET was formally adopted by the city Council and the executive committee. In order to properly execute *eco*BUDGET, some institutional changes were necessary. A trans-sectoral working group was created within the administration and approved by the executive Council. Officially, *eco*BUDGET is led by the department of environment but many other departments and offices

have been involved in its implementation. This is due to the cross-cutting nature of *eco*BUDGET, which requires information from many different departments. The local *eco*BUDGET team in Bologna includes the following departments:

- Environment Department
- Sustainable Mobility
- Public Tenders
- Municipal Multi-utilities for energy, water and waste
- Local public transport company

In addition to these municipal departments, the international relations and projects office is involved. It provides the necessary experience in cooperating with international partners during international tendering processes.

The reason Bologna was interested in *eco*BUDGET in the first place was their wish to identify critical resources that need to be monitored and managed. Before *eco*BUDGET was introduced in 2001, the only monitoring tool used by the administration was the "Report on the state of the environment", which

collected data in a very static way, without indicating targets and measures to reach those targets. In addition, the administration had difficulties with monitoring ongoing measures properly. One of the main obstacles in that regard was the resistance of colleagues from different departments to provide and publish the necessary data. *eco*BUDGET, however, offered many benefits and helped overcome these difficulties:

- It has systematised data collection, supporting the creation of a basic data set that was missing and is now updated annually
- It has allowed for the creation of a system for evaluating the efficacy of the actions as regards the selected resources
- It has brought about a new awareness on the major environmental issues at stake
- It has increased transparency towards the population on priorities and activities carried out by the municipality

Throughout the implementation process, *eco*BUDGET was constantly adapted to changing local situations and needs. In the Budget Balance 2011 for instance, a new set of indicators was introduced. It tackled the use and consumption of natural resources by the Municipality of Bologna itself. In this way the administration applied the same indicators used at city level on itself.

Results of the *eco*BUDGET Implementation

At present, 13 environmental budgets have been adopted, among them six Budget Balances and seven Master Budgets. Over the years *eco*BUDGET has developed into an integral part of the municipality, despite the political changes that took place over the years. This demonstrates the validity and efficacy of *eco*BUDGET, and the high level of acceptance within the municipality. Since its introduction in 2003, some indicators have been replaced by others as targets have been met. For example, C₆H₆ (benzene) is not a critical indicator for the city anymore, since access to the town centre for the most polluting motorcycles is now restricted. A new indicator regarding CO₂ emissions was introduced, as the administration implemented a new set of measures for CO₂ reduction.

In fact, the environmental budget turned out to be a useful tool not only for technicians, but for the political level and city managers. It enables them to better administer and manage the urban area. In particular, it allows for a link between environmental aspects and social and economic issues to be drawn.



Key Findings

*eco*BUDGET provides both a comprehensive overview of the situation in the urban area and raises awareness. The numerical indicators allow for a solid planning of measures and help to reach targets and to monitor their effects. In addition, *eco*BUDGET supports more effective internal and external communication.

During the initial phase of *eco*BUDGET, only the city was considered as a macro-indicator (e.g. waste disposal in the city, air quality, green areas, etc). Later, however, *eco*BUDGET added specific indicators linked to projects on particular city areas (e.g. waste collection in the city centre, pedestrian areas in the city centre, new trees planted within the EU GAIA project, etc.). Moreover, specific indicators relating to the use of resources by the municipality itself (offices) have been included (e.g. energy, water, gas consumptions, number of municipal ecological cars used by the PA, number of employees using public transport, etc.).

Lessons learned

The main lessons learned throughout the *eco*BUDGET implementation process were the following:

- 🌱 Importance of political commitment
- 🌱 Importance of setting-up a trans-sectoral team
- 🌱 Importance of setting up a database with constantly updated environmental data

It was a tough task to ensure data collection at regular intervals so that the timing of the Master Budget was reflected. This problem persisted, leading to regular postponement of the deadlines for the elaboration and approval of the Budget Balance. In recent times, the technicians in cooperation with the political level have set the targets. A stronger involvement of citizens and other major stakeholders has yet to be developed. To guarantee commitment at the political level, *eco*BUDGET is presented to the decision-making bodies at the beginning of each political mandate, as a voluntary instrument. To better include the citizens, enterprises and other major stakeholders, a process was started to link the indicators of the environmental budget with open data. The use of that will be exploited for new applications and uses.

Replication of *eco*BUDGET in other municipalities

There are several conditions that should be met, before implementing *eco*BUDGET in a municipality. It is important to have a political level that is aware of the environmental issues at hand and committed to tackling them. In addition, an office within the administration has to be appointed to take over the lead on the *eco*BUDGET implementation. At the same time, a technical coordinator is needed. Finally and most importantly, updated and easily collectable data regarding the chosen indicators is needed.

The Local Implementation Team involves staff from four different municipal Departments (environment, mobility, statistics and purchase) and from other external bodies (Hera multi-utility, Environmental Regional Agency ARPA, Local transport company TPER, the Province, the Emilia- Romagna Region, etc.).

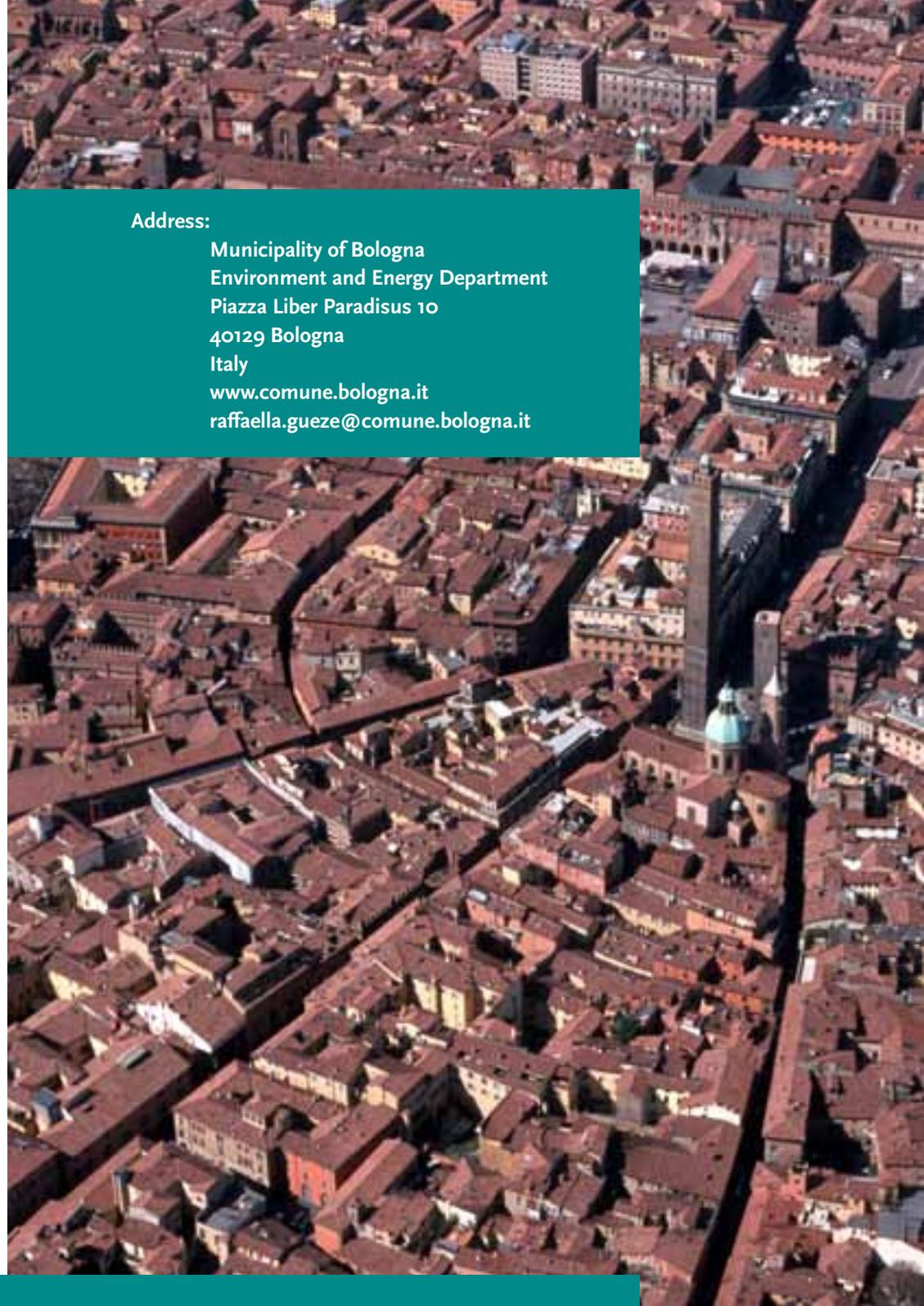
The experience of Bologna with *eco*BUDGET since its introduction in 2003 has led it to conclude that it is flexible enough to be adapted to new needs and the evolving political, technological and global situation.

How is *eco*BUDGET funded in Bologna

Staff costs of the local implementation team represent the main costs related to *eco*BUDGET. Generally, meetings take place once or twice per year and regular communication is carried out via phone or email. Economic resources to implement the selected measures are clearly indicated in the municipal budget and therefore depend fully on the projects the administration decides to implement. Initially, the environmental budget was introduced with the support of the European *eco*BUDGET project, funded by the LIFE programme of the EU (2001-2003). Since then, the activities are funded by the municipality itself. This includes staff working on *eco*BUDGET (mainly internal staff) as well as measures foreseen in the municipal budget. The concrete measures may also be financed by bank foundations or the private sector.

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The idea of integrating environmental values into the financial budget system was attractive for many local politicians, as it was a particularly straightforward solution.

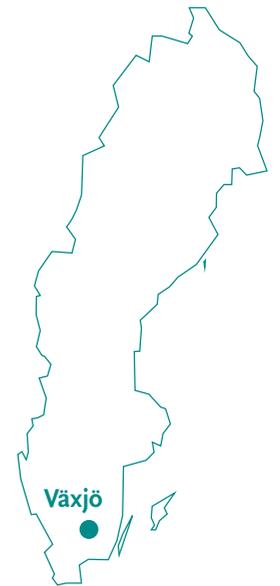
CASE STUDY OF *eco*BUDGET IMPLEMENTATION IN

VÄXJÖ (SWEDEN)

Background Information on Växjö

The City of Växjö is located in the South of Sweden and embedded in a landscape dominated by forests and more than 200 lakes. It is the administrative, cultural and industrial centre of Kronoberg County and has around 85,000 inhabitants. Växjö is growing steadily and has a special focus on safeguarding and improving the local environment.

Active environmental work in Växjö started in the 1970s, when one of the lakes that suffered from heavy eutrophication was restored. As early as 1996 the municipality adopted a vision to become fossil fuel free. A target to reduce CO₂-emissions per inhabitant by 50% in 2010 compared to 1993 was also adopted during this time. However, nobody really knew whether it was possible to achieve this goal by 2010, or what kind of actions would be needed to do so. Regardless, the politicians and civil servants were convinced that the city needs a strong and clear target, and made sure it was not forgotten over time. Even though this target could not be reached in 2010 (the result in 2010 was -21% per inhabitant and in 2011 -41% per inhabitant), this concrete goal served as a great motivation for the organisation.



Because of its ceaseless efforts to protect its environment, the city is often referred to as a frontrunner city in the field of environmental protection. This became even more evident when the BBC called Växjö “The Greenest City in Europe”. After that, the city Council adopted this catchphrase as a slogan in a unanimous Council vote. Since its adoption in 2007, the slogan has been an important catalyser for the city’s environmental work. After the adoption of the catchphrase, (officially used as the trademark for the municipality) the politicians have been very keen to live up to the catchphrase. This has resulted in increased environmental awareness, political commitment and the firm belief that the municipality must implement ambitious measures in order to be associated with strong and successful environmental work. The politicians were convinced that this green image would, in the long run, attract business to the city. In fact, the municipality started working towards their vision and carried out a number of concrete actions:

- 🌱 Collections of organic waste from households and biogas production (for vehicle fuel)
- 🌱 Increased rate of organic food
- 🌱 Building of low energy houses and passive houses with wood construction measures to increase cycling
- 🌱 Building of a new heating and power block for the combined heat and power plant to ensure that power and heating production will be 100% fossil free by 2014.

Växjö and *eco*BUDGET

The need for an environmental management system was identified in the early 2000’s, when it became evident that a holistic system was required to better steer towards a fossil fuel free future. At that time, the organisation couldn’t find an environmental management system (EMS) that captured the complexity of a political organisation. Hence, the introduction of *eco*BUDGET through an EU project was the perfect solution to this dilemma. In simplified terms, this EMS manages the environmental resources similar to a financial management system.

That is why Växjö joined the EU project in 2003, as a means to introduce the *eco*BUDGET into the municipality. The idea of integrating environmental values into the financial budget system was attractive for many local politicians, as it was a particularly straightforward solution. In practice, the system was introduced by the

strategic planning office and supported by the financial department. This can be regarded as a success factor, as it ensured an ecological balance and budget status, which in turn made it easier to integrate with financial documents. While *eco*BUDGET was very well received in these departments, the technical department was a lot more reluctant. This was due to the fact that they had to deal with a lot more administrative work than before, whose origin and purpose was not always clear to them. After some time however, the two systems cooperated much better, and politicians were more and more aware of the benefits *eco*BUDGET provided. *eco*BUDGET was formally adopted by the Council and then institutionalised. An implementation team was created, that fosters cross-departmental cooperation and is in charge of the overall *eco*BUDGET process. In addition the implementation team manages the indicator development process. When it comes to the generation of data and the practical implementation work of *eco*BUDGET, the responsibilities are spread out in the organisation. Each department breaks down the environmental targets into their own targets, and plans for measures in a way that fits their assignment.

In general, politicians especially value the extensive background data that *eco*BUDGET produces during the budget preparations. In fact, since the introduction of *eco*BUDGET new measures introduced by the administration of Växjö must lead to a positive environmental impact. In addition, the targets and indicators have become well known throughout the organisation as they show up on the politician’s desks as soon as they work on issues related to the municipal budget. In addition, targets are followed up at least twice a year and commented on during the budget planning process.

In Växjö, *eco*BUDGET is used to help move towards the targets in the Environmental Programme¹¹. This should then ultimately lead to the achievement of the vision. In fact, the vision has helped Växjö to stay on track and to focus on where it wants to be in the future. There are two different kinds of targets in the Environmental Programme – targets to strive for (long-term targets with no end year set) and targets to achieve (short-term targets with an end year set). Each target is connected to an indicator, enabling progress to be monitored. Within *eco*BUDGET there are two kinds of indicators:

- 🌱 Budget indicators
- 🌱 Follow-up indicators

The budget indicators are used to steer towards the short-term targets, while the follow-up-indicators are monitored to get an overview of the status of the long-term targets.

Results of the *eco*BUDGET Implementation

Since the introduction of *eco*BUDGET in 2003, it has become natural to integrate environmental indicators with financial components. This of course did not happen overnight, but was a rather gradual process. At first, *eco*BUDGET was not accepted on all levels, but this slowly changed over time. Some departments complained about the extra environmental work, since managers have been traditionally used to reporting financial outcomes only. The additional request to also report on environmental outcomes was new to them. Bit by bit this changed, particularly after the routine became well established and the benefits to the organization's environmental work from an annual follow up process became clear.



Key Findings

*eco*BUDGET has helped Växjö to identify targets and provided an important monitoring tool. Since the introduction of *eco*BUDGET, Växjö has been able to monitor environmental results, thereby ensuring continuous improvement.

*eco*BUDGET proved to be useful for the development and attainment of local environmental targets and the safeguarding of environmental resources. The indicators developed within *eco*BUDGET supported the monitoring of local environmental action, helping to meet the city's targets. Among these local targets were the following: a reduction in CO₂-emissions, an increase in the rate of organic food in the organisation, and an increase of the number of bicycles. The indicators proved less successful when it came to the implementation of green values such as the quantity and quality of biological diversity, amount of "green" areas compared to paved areas, quality and quantity of habitats, etc. In this area the municipality was lacking good and reliable statistics, as it turned out to be more challenging to define efficient indicators in this field. Thanks to a close follow up of the indicators, *eco*BUDGET has shown to be efficient when communicating the environmental status and achievements to citizens.

Lessons learned

Despite some successful environmental achievements, many challenges still lie ahead. The municipality was successful in reducing the local impact of their consumption and lifestyle, however, Växjö still affects the environment in other parts of the world. *eco*BUDGET, the vision, and related projects have helped the administration to always keep the global perspective in mind. In order to get the environmental work ready for the up-coming five to 10 years, the city of Växjö identified three priority areas:

- 🌱 Sustainable transport solutions
- 🌱 Good ecological status of the city's lakes
- 🌱 Energy efficient refurbishment of the existing building stock

These areas were identified after all targets were evaluated according to the likelihood of them being achieved. As a result of this, action plans for each priority area were developed. *eco*BUDGET has proven to be important in this context.

Replication of *eco*BUDGET in other municipalities

*eco*BUDGET is a very flexible system that can be adapted to the specific features of any organisation. Over the years, *eco*BUDGET was adapted to Växjö's needs and was regularly used by the administration. Throughout the implementation process targets were adapted and the number of indicators changed according to the progress made.

In Växjö, several different factors further contributed to the success of *eco*BUDGET. The timing of *eco*BUDGET's introduction was favourable, as many accepted the need for a holistic environmental management system for the municipality. In addition, the *eco*BUDGET introduction in Växjö benefited from good political management, persistent strategic environmental planning and a little bit of luck.

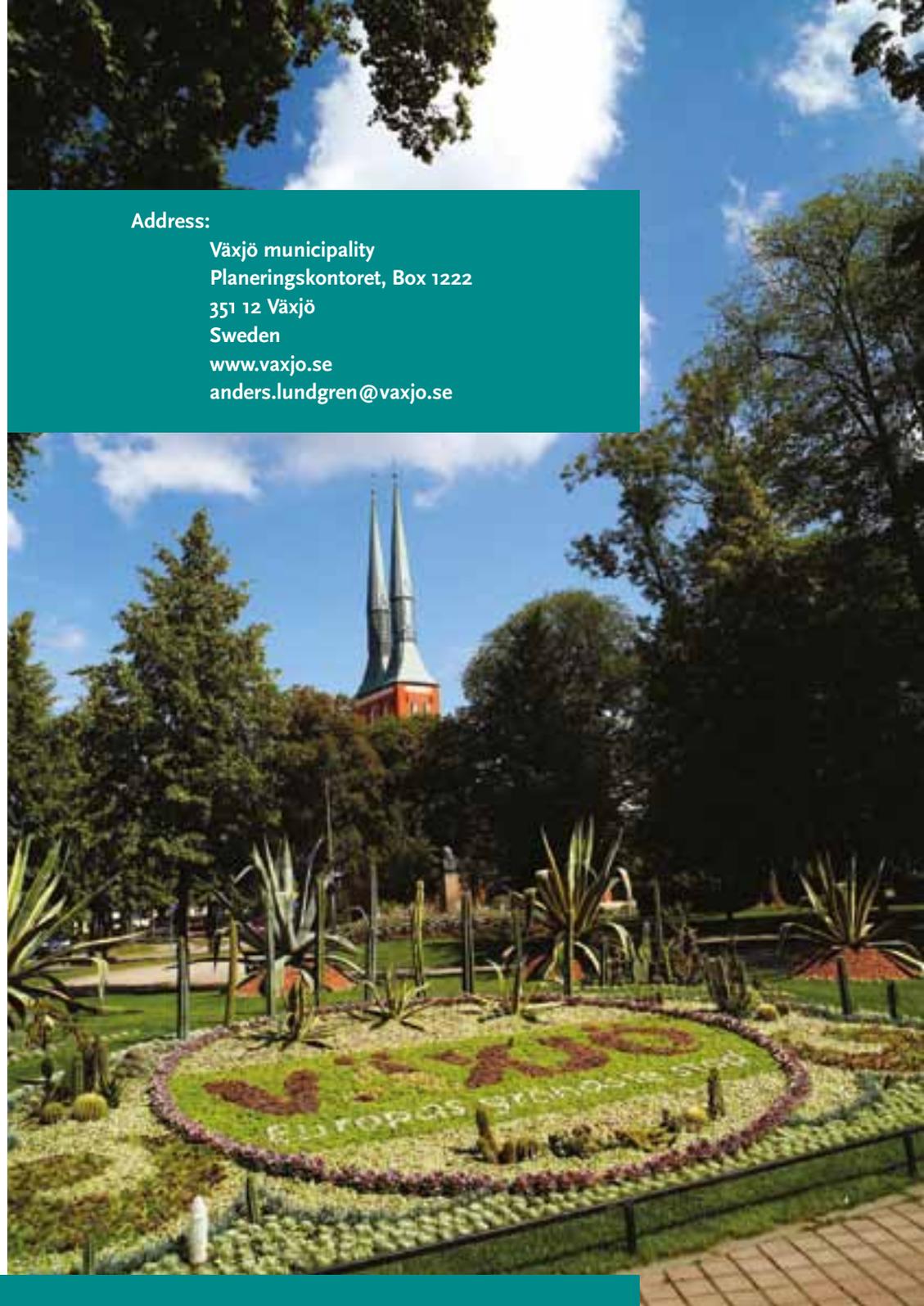
The experience in Växjö clearly shows that *eco*BUDGET can be even more successful when combined with a city-wide vision. In many ways the vision "The greenest city of Europe" has triggered even more ambitious action, and *eco*BUDGET has been very useful in communicating how far this vision has been achieved.

How is *eco*BUDGET funded in Växjö

As mentioned earlier, *eco*BUDGET was originally co-funded by an EU project. After the project finished, Växjö was very interested in keeping the system. Therefore, the municipality decided to finance a half-time employee who is managing the system. The money for this position comes from the ordinary tax based budget. Again, the politicians and civil servants in charge thought that *eco*BUDGET was needed for the management of the municipality's ambitious environmental targets. It was hence considered rational to use the municipality's budget to hire a person. Today the funding for managing *eco*BUDGET comes from the tax-based budget and constitutes a natural part of the strategic environmental work of the municipality.

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¹¹ <http://www.vaxjo.se/upload/6433/Environmental%20Programme%20060518.pdf>

ANNEX – MASTER BUDGET 2012 AND BUDGET BALANCE 2012 IN THIMPHU, RAJSHAHI, AND BALILIHAN

6.1 How to read the tables

The tables show the Master Budgets of Thimphu, Rajshahi, and Balilihan and the Budget Balances of Thimphu and Rajshahi. They outline the indicators and short-term targets to be met in 2012, and display the targets achieved by these two cities. The table also shows the measures undertaken by the cities to achieve the targets set out in the Master Budget.

Finally, the Balance is calculated based on the target achieved as compared to the target that was set for 2012.





6.2 Master Budget 2012 and Budget Balance 2012 in Thimphu

The City Council of Thimphu approved the Master Budget 2012 in July 2010, identifying indicators and setting short-term targets for 2012. Over the period of 2010 to 2012, the city Council officials carried out a number of activities to achieve the targets set in the Master Budget. In 2013, the Budget Balance 2012 was ratified in the city Council.

The document clearly shows that most short-term targets for the year 2013 have been met. In fact, in many cases a lot more was achieved than initially planned for. The only area in which Thimphu faced challenges was the indicator relating to the amount of waste received at the landfill. This is due to an increase in the city population caused by an expansion of the city limits, which increased the amount of waste being generated in the city.

Another consideration is the ambition of the city councillors, who were courageous enough to set ambitious targets for the year 2013, especially in the field of transport, waste and biodiversity.

Realising DReAMS
MASTER BUDGET OF THE THIMPHU THROMDE
(using the example of Waste)

Resource	Indicator	Unit of measure	Reference year	Previous year (2010) value	Short term target (One year)	Midterm target (Three years)
Waste	Amount of waste received at Landfill monthly	Tons per day	2010	25 tons per day	Reduce by 20%	Reduce by 50% by end of project
	Segregation at source – amount of waste segregation	Tons per day	2010	0 Tons per day	2 Awareness campaigns on waste segregation	Initiate segregation of waste at source by project end
	Amount of organic waste received at Compost Plant	Tons per day	2010	12 Tons per month	Increase by 25%	Increase by 50% by end of project
	Oil waste from automobile entering the river	Oil water separator plant	2010	0	Have 1 plant by project end	Reduce oil entering the river
	Recycling	Number of trucks per month	2010	10 trucks per month of recycled waste	Increase by 10 %	Increase by 20 %

BUDGET BALANCE OF THIMPHU

(using the example of Waste)

Resource	Indicator	Unit of measure	Reference year	Short term target (3 year)	Measures undertaken	Budget Balance
Waste	Amount of waste received at Landfill monthly	Tons per day	2010	reduce by 50% by end of project	Installation of 1. PET crushing plant 2. Compost plant 3. Active private firm PET crushing plant outsourced to the public (Approved) Full operation of compost plant With more expansion of the city and construction activities, the waste generations have increased. (Source: Solid Waste Section, Thimphu Thromde)	Reduce by 50% by end of project
	Segregation at source – amount of waste segregation	Awareness campaigns	2010	2 Awareness campaigns on waste segregation Initiate segregation of waste at source by project end	1. 3 school level campaigns 2. 6 community campaigns 3. 3 Cleaning campaigns Good response from the public on waste management Initiated pilot segregation at source for 300 Buildings(1000 HH). (Source: Solid Waste Section, Thimphu Thromde)	600% (more than 100%)
	Amount of organic waste received at Compost Plant	Tons per month	2010	Increase by 50% by end of project	Municipality collection from the Sunday Farmers Markets People interested in the compost and good market. Increase the numbers of collection from the market Increased to 20 tons per month with new collection from pilot waste segregation area. (Source: Solid Waste Section, Thimphu Thromde)	130% (more than 100%)
	Oil waste from automobile entering the river	Oil water separator plant	2010	Have 1 plant by project end. Reduce oil entering the river	Plant proposal was approved by the government. Construction is completed and operation has begun. Collected 1500 litres of waste oil till date from the tank. (Source: Solid Waste Section, Thimphu Thromde)	100%
	Recycling	Number of trucks per month 1 truck = 3 tons	2010	Increase by 20 %	1. Access to waste pickers from landfill 2. Involve private sector in recycling. Streamlining the process of selling the waste across the borders is under process. (Source: Solid Waste Section, Thimphu Thromde)	200% (more than 100%)



6.3 Master Budget 2010 and Budget Balance 2012 in Rajshahi

The Rajshahi City Corporation approved the Master Budget in December 2010 at a Council meeting presided over by the Mayor. Rajshahi has successfully applied *ecoBUDGET* in its daily routines and developed an impressive Master Budget, based on their Mayor's Vision for the city in 2018. The targets named in the budget show the overall ambition of the municipality to improve their resource efficiency and save their local environment.

The Budget Balance conducted in 2012 was an honest account of what has been achieved and where more work is still to be done. Rajshahi was exceptionally successful in the field of solid waste and energy conservation. In these fields a lot more than initially planned for was achieved, such as the installation of 7,200 energy efficient public lights compared to the 3,000 planned for initially. In other areas, the targets set could not be met or were not assessed at this point in time. Especially in the field of sanitation, major issues remain and additional effort is needed to meet the targets that were sent in the Master Budget. The issue of health had to be removed from the Master Budget after the review at the end of the year, where the City Corporation realised that this aspect is not fully under the control of the Corporation, but primarily follows the central government schemes. This has therefore not been reported in the table.

Realising DReAMS
MASTER BUDGET OF THE RAJSHAHI CITY CORPORATION
(using the example of Water and Sanitation)

Resource	Indicator	Unit of measure	Reference year	Previous year value	Short term target	Mid term target	Reason/background for target
Water	Available water supply – no of HH with access to municipal water supply	%	2010	54	65 by 2012	100 by 2018	Mayor's vision
	Reduction in Non Revenue Water - street hydrants (taps)	%	2010	40	30 by 2012	23	23% is the standard for developing country
	Amount of water consumption per head -145 lpcd	Lpcd	2010	70	85 by 2012	145 by 2018	Mayor's vision
	Rain Water harvesting	Number of hours	2010	0	10 by 2012	200 by 2018	Mayor's vision
Sanitation	Decrease in no of outlets of septic tanks in drains	%	2009	55	45 by 2013	0 by 2021	
	Engage more community based collection of waste	Number	2010	8	30 by 2012	60 by 2018	Mayor's vision
	Coverage of Toilets - By 2015, 100% toilet coverage	%	2010	90	95 by 2012	100 by 2015	

BUDGET BALANCE OF RAJSHAHI
(using the example of Water and Sanitation)

Resource	Indicator	Unit of measure	Reference year	Previous year (2010) value	Short term target (Budget 2012)	Target achieved	Measures undertaken	Budget Balance
Water	Available water supply – no of HH with access to municipal water supply	%	2010	54	65	72	1. 500 HT installation 2. 60 Km Pipe line, 72 % coverage achieved	100%
	Reduction in Non Revenue Water - street hydrants (taps)	%	2010	40	30	39	1. Closing of 100 street hydrants (taps) 2. Repair pipe line leakage 3. Closing illegal water connection	10%
	Amount of water consumption per head -145 lpcd	Lpcd	2010	70	85	80	Use of tap water instead of hand tube well water	67%
	Rain Water harvesting	Number	2010	0	10	0	Installation of 5 rain water tank	50%
Sanitation	Decrease in no of outlets of septic tanks in drains	%	2009	55	45 by 2013	55	50 connection with drains closed. Awareness program with mass people. Some houses are directly connected to the drain without septic tank. Some house with septic tank also connected to the drain.	No assessment was done. 0%
	Engage more community based collection of waste	Number	2010	8	30 by 2012	25	17 communities included.	77%
	Coverage of Toilets - By 2015, 100% toilet coverage	%	2010	90	95 by 2012	90	Construction of 350 toilets. Two projects like UPPR and UPHSDP are supporting funds to construct the 250 toilets. No significant measurable improvement as yet.	0%

6.4 Master Budget 2012 in Balilihan

Realising DReAMS

MASTER BUDGET OF THE MUNICIPALITY OF BALILIHAN

(using the example of poor water quality and illegal cutting of trees)

Environmental Issues	Resources Affected	Indicator	Base Year/ Last Year (2010)	Accomplishment as of calendar year 2011	Targets (2013) Short Term	Targets (2016) Long Term
Poor quality of water	Human (Health), Biodiversity (flora and fauna), Drinking Water	Number of water sources with positive coliform	7 water sources (existing) positive in coliform	7 water sources coliform free (remaining 5 sources were already installed with a chlorinator)	7 water sources coliform free	zero coliform
Illegal cutting of trees	Climate, Biodiversity	Increase areas planted with trees (LGU-target)	16 hectares (pocket forest in all barangays at 0.5 hectares/brgy)	30 hectares in timberland area in Boyog Sur, Boctol & Baucan Sur	16 hectares (pocket forest in all barangays at 0.5	Double the number of hectareage planted with trees (16 has)
		Areas planted with bamboos (BOHECO)	150 hectares along the riverbanks	propagated through natural process	150 hectares along the riverbanks	Regular program every year
	Forest cover	survival rate in percent	75%	1.41% (30 hectares) of forest cover reforested through the National Greening Program (CY 2011)	85%	90-95%

IMAGE CREDITS

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Additional images:

page 104: Josh and Erica Silverstein, Flickr

page 128: Anduze Traveller, Flickr

page 156: Anduze Traveller, Flickr

ecoBUDGET is designed to support local governments from all over the world in managing their resources in a sustainable and efficient way. It transfers principles and routines of financial budgeting to the management of environmental resources. This guide illustrates the difficult but rewarding journey of implementing ecoBUDGET in South and Southeast Asia. The first part of the guide gives an account of the history of ecoBUDGET and explains the framework, in which ecoBUDGET is operating. In the second part, the five steps of ecoBUDGET are outlined and practical tips for their implementation are provided. The third part of the guide offers case studies from the participating municipalities and illustrates the benefit as well as the challenges of ecoBUDGET.



ecoBUDGET

