

# **The balanced scorecard as a tool for environmental management: approaching the business context to the public sector**

**Sónia Silva Monteiro** (IPCA) - smonteiro@ipca.pt

**Verónica Paula Lima Ribeiro** (IPCA) - veronica@ipca.pt

## **Resumo:**

*The balanced scorecard (BSC) model emerged in the business world as a tool to control social and environmental management, since it establishes a symbiosis between financial/economic and environmental/social goals. The aim of this paper is to present the different possibilities for the integration of environmental issues into the BSC, both in private and public entities. As in the private sector, the literature is not unanimous regarding the integration of environmental indicators into an independent perspective. The implementation of BSC model in the public sector requires double attention: on the one hand, because it is necessary to adapt it to the specificities of public entities, and on the other hand, because its environmental aim is different from and wider than that of the private sector.*

**Palavras-chave:** *Balanced Scorecard; Environmental Indicators; Environmental management; Public Sector*

**Área temática:** *Abordagens contemporâneas de custos*

## **The balanced scorecard as a tool for environmental management: approaching the business context to the public sector**

### **Abstract**

The balanced scorecard (BSC) model emerged in the business world as a tool to control social and environmental management, since it establishes a symbiosis between financial/economic and environmental/social goals. The aim of this paper is to present the different possibilities for the integration of environmental issues into the BSC, both in private and public entities. As in the private sector, the literature is not unanimous regarding the integration of environmental indicators into an independent perspective. The implementation of BSC model in the public sector requires double attention: on the one hand, because it is necessary to adapt it to the specificities of public entities, and on the other hand, because its environmental aim is different from and wider than that of the private sector.

**Keywords:** Balanced Scorecard; Environmental Indicators; Environmental management; Public Sector

**Área Temática:** Abordagens contemporâneas de custos

### **1 Introduction**

The assumption of environmental responsibility by companies is increasingly apparent in the integration of environmental variables into their management processes, and a growing number of companies are adopting a proactive approach to sustainable development, formulating environmental strategies that seek the continuous improvement of their environmental performance. Although it is generally considered that companies, particularly those belonging to industrial sectors, are the entities that produce greater impacts on the environment, the fact that public administrations, especially city councils, also generate a significant volume of pollution and carry out activities that significantly affect the environment cannot be ignored. As a consequence, public organizations have been subjected to internal and external pressures in order to adopt practices and carry out actions consistent with the preservation of the environment, which will enable them on the one hand to manage their own environmental impacts better and on the other hand to promote and encourage the adoption by other organizations of behaviours consistent with the preservation and protection of the environment.

This proactivity is equivalent to implementing “sustainable” practices and management tools and simultaneously it has led to the emergence of new information needs by different stakeholders, the satisfaction of which requires a change to the companies’ traditional information systems in order to generate adequate and timely environmental information for their decision-making processes. Likewise, the role of management indicators and the possibility of integrating the balanced scorecard (BSC) have caught the special attention of researchers in the field of environmental management and accounting, namely in the private sector. However, in the last years we have seen the investigation in this area extending to the public sector, after adapting the BSC to the characteristics of environmental public management.

In this context, the aim of this paper is to analyse, from a theoretical point of view, the issues relating the development of support indicators to the environmental management of

public and private entities, analysing the several options exposed in the literature on the integration of environmental issues into the BSC model, in both the private and the public sector. The paper is organized as follows: after a brief reference to the way that the environmental variable can be included in the strategy and management of public and private entities and to the convergence of environmental management models in both sectors, we present a literature review regarding the integration of the environmental indicators into the BSC, exposing authors' differing opinions on how to incorporate (separately or independently) the environment variable into Norton and Kaplan's model, taking into account the characteristics of both the private and the public sector.

## **2 Convergence between private and public environmental management**

The different pressures that companies have been submitted to in order to achieve a balance between economic growth and environmental preservation have led to an additional factor to consider in business management, leading to the concept of environmental management, which is included in the general management system of the company. Environmental management focuses on managing the impacts and interrelationships between the environment and the processes and activities conducted by companies, and it is based on the implementation of different activities that preserve and reduce the negative effects of business activity on the environment. Companies are increasingly adopting environmental management practices, especially in response to increasing environmental legislation but also as a way to reinforce business performance and competitiveness. However, the extent to which companies have adopted these practices and principles of environmental management varies depending on the sector of activity to which they belong and on other factors such as the company's size and financial situation (Roy *et al.*, 2001).

According to Taylor et al (1994), the degree to which companies from different sectors adopt environmental management practices can be analysed through a three-level pyramid, each level representing a different level of diffusion or penetration of environmental management in companies:

- High diffusion of environmental management: on the top of the pyramid there are companies using materials that are extremely dangerous to the environment and whose activity is considered “dirty” and harmful. In these industries, environmental management is mandatory and it is considered a matter of survival.
- Moderate diffusion of environmental management: at an intermediate level we can find companies that, although at first are not considered extremely dangerous to the environment, develop an activity that might, accidentally, have a negative impact on the environment, since they use natural resources (trees, minerals, energy, land) excessively or because they can cause pollution through air emissions, waste or discharges.
- Low diffusion of environmental management: at the base of the pyramid we can find the service sector and public administrations. Although it is generally considered that their activities do not cause as much pollution or are as “dirty” as those developed by the companies belonging to the previous categories, bearing in mind the number of these organizations and their impact on the overall economy, they contribute indirectly to environmental pollution (as a consequence of using vehicles, the generation of waste: use of paper, packaging, office furniture, central heating) and, under certain circumstances, directly to the environment (for example, in the construction of roads and other necessary infrastructures). These kinds of entities are called silent destroyers; since we are considering “clean” businesses that supposedly do not originate products or apparently pollutant wastes.

Environmental management is undeniably necessary in businesses considered “dirty” or dangerous for the environment, while polluting industries from the second level consider it moderately and finally it has been ignored for a short period of time in the case of silent destroyers (Taylor et al, 1994). However, it has become clear that the interest in the development and implementation of environmental management practices is increasing in companies of level two, and regarding companies from level three (which include public administration), their effects on the environment have become very important nowadays and consequently it is necessary for them to abandon their attitude of indifference before environmental problems and to integrate environmental management principles and practices into their management models.

In this line, in the last decades, several authors have called for the need for a more effective public administration through a technique, culture and philosophy similar to those used in the private sector, attending to the specificities of the public sector, which has resulted in the new public management. According to Aibar Guzmán (2002), similarly to private companies, public companies may act in two ways: (a) adopting a proactive attitude, that is, contributing actively to the preservation of the environment. This position requires a change of attitude by local entities and the development of strategies to achieve the goals of environmental protection; (b) spreading the new “environmental” culture by raising the consciousness of economic agents and citizens regarding the importance of developing protective attitudes and the preservation of the environment.

This means that as companies, public entities must assume the consequences of their actions before society, which, depending on the environmental size of their activity, implies the integration of environmental variables into public administration. Although the public sector has different and unique characteristics from the private sector, the two sectors do not make two isolated and parallel speeches, but two performances that overlap in their essential aspects. In this regard, Rondinelli and Berry (2000) emphasize the need for greater cooperation of central and local governments with the private sector. They argue that to overcome the “gap” between public policies regarding the environment and the practices of environmental management developed by the companies requires, on the one hand, the adoption by both sectors, public and private, of a new philosophy that emphasizes eco-efficiency and recognizes that economic growth and environmental quality are two mutually interdependent goals, and on the other hand, the establishment of relationships of cooperation between central and local governments and between private and public sectors in order to identify, disseminate and adapt processes and new technologies for the improvement of environmental quality.

### **3 Indicators of environmental management in the balanced scorecard**

There is unanimity in the literature concerning the potential of management indicators to reflect different ways of undertaking environmental action in an organization, considering that they allow the analysis of the improvement (or aggravation) of the environmental performance of a particular company and its comparison over time between different units or areas within an organization, between several companies of the same industry or even between industrial sectors (Young, 1996). In this way, Blanco Dopico et al (2000) consider that adequate environmental management requires the development of a set of indicators to evaluate the environmental action of the company and its level of achievement. Indeed, environmental indicators allow the conversion of selected data into accurate information on environmental performance, grouping the ISO14031 into three different categories categories (Jurado Martín et al., 2005): (a) indicators of environmental behaviour: they provide information on the management efforts relating to the environmental behaviour of the

organization, focusing on the planning, control and environmental impact; (b) indicators of environmental situation: they describe the quality and characteristics of the company's environment; (c) indicators of environmental management: they provide information on the environmental behaviour of an organization, mainly its actions, in order to minimize the environmental impacts emerging from its activity.

In this line, Banegas Ochovo et al (2000) argue that most of the success of environmental control systems lies in the definition and establishment of indicators to collect relevant information for making decisions and for monitoring and controlling the management. There is no doubt that using this kind of indicator will easily allow any organization to implement and evaluate properly the environmental management system (EMS). Besides, these measures can be considered a mechanism of communication within environmental management.

Blanco Dopico et al (1998) suggest the need to adopt a strategic BSC model for environmental indicators together with the rest of the management indicators of an organization (financial and non-financial, internal and external, quantitative and qualitative), and more importantly to connect these indicators with the company's goals and strategies. In this line, they propose the BSC model, developed by Kaplan and Norton in 1992, since its structure allows the combining of a set of balanced and coherent measures of different kinds, bound to long-, medium- and short-term goals, providing a global overview of the organization and its strategy, acknowledging the level of achievement for established goals and analysing the causes that led to the results obtained. According to Kaplan and Norton (1992, 2001a-b), the BSC will explain the vision-mission and strategy of the organization through goals, measures (or indicators) and aims and different initiatives, organized around four perspectives:

- customer: satisfying customers' needs is a priority for the management, hence this perspective should be constituted by measures or indicators related to the different factors considered important by the customers;
- internal business processes: these refer to the identification of the critical processes on which the company must be successful and that should originate impacts at satisfactory levels for customers and the company's financial profitability. So, they include indicators relating to the costs, quality and life of processes.
- learning and growth: the improvement and growth of the organization requires investment in the continuous training of workers and in the development of the skills and abilities necessary for the achievement of its goals. So, this perspective includes indicators to measure the current level of the organization engaged in training and innovation activities, as well as the results obtained with them over time.
- financial: this refers to the financial results from the organization's different actions.

These perspectives should be integrated and there should be a balance between the level of importance of each one, so its analysis provides a systematic vision of the company that suits the development of strategic management. Besides, for each perspective it is necessary to identify the key indicators as well as the cause-effect relations that explain how to obtain better results, so all the indicators should interrelate (Kaplan and Norton, 1992; Kaplan and Norton, 2001a-b). The use of BSC to support environmental management has been investigated by several authors who argue that the extension of the BSC to environmental management allows it to enjoy the use of this tool while favouring the treatment and analysis of strategic aspects of the company's environmental action (Maside Sanfiz and Aibar Guzmán, 1999; Banegas Ochovo et al., 2000; Blanco Dopico et al., 1998 and 2000; Da Rocha et al., 2001; Torres Agudelo, 2001; Figge et al., 2002; Dias-Sardinha et

al. 2002 and 2007, Monteiro et al., 2003; Gimeno Zuera et al., 2005; Dias-Sardinha and Reijnders, 2005; Petrini and Pozzebon, 2008; Hubbard, 2009; Butler et al., 2009; Lämsiluoto and Järvenpää, 2008 and 2010).

As an open system the balanced scorecard facilitates the consideration of sustainability issues (Moller e Schaltegger, 2005). Consequently, the literature sustains the idea that the BSC is an excellent way to control environmental and social management since it allows the establishment of a symbiosis between financial–economic and environmental–social aims. Thus, according to Beja (2003), using strategic maps in order to represent environmental and sustainability issues will make the decision-making processes easier, stressing the interrelation between the established aims and the developed strategies in this area. In fact, by allowing strategies established by top management to reach lower hierarchical levels and at the same time to favour the feedback of the information on arising incomes in the organization, the BSC is able to improve not only the process of evaluation of environmental performance, but also its interaction with the global performance of the organization (Campos, 2001). In this regard, the literature presents two main alternatives for incorporating environmental strategic information:

- Maintaining the four traditional perspectives of the BSC, by distributing environmental indicators among each perspective (Torres Agudelo, 2001; Epstein y Wisner, 2001; Monteiro *et al.* 2003). This view supposes the development of different classes of indicators (financial and non-financial) in order to evaluate the different aspects of a company's environmental performance. For example, the customers' perspective will include the indicators to represent the environmental attributes that they appreciate in the company's products. In this alternative we can also include the environmental component from the perspective of internal processes, turning to measures related to pollutant processes. Concerning the perspective of learning and growth, the indicators should evaluate the results from eco-innovation in processes and products, as well as the training initiatives and staff awareness of environmental issues; finally, the financial perspective should provide awareness of the effect of the company's environmental performance on the financial results.
- Adding a fifth perspective, entitled "social and/or environmental perspective", which would include all the environmental indicators already developed (Campos, 2001; Figge *et al.*, 2002; Moro Prieto y Fernández Rodríguez, 2003).

Monteiro et al (2003) argue that distributing environmental indicators among the four traditional perspectives of the BSC is more interesting than the alternative of creating an exclusive perspective for environmental issues. Consequently, these authors analyse the use of this management tool in Shell Brasil and conclude that, in spite of the company having used an independent perspective to collect environmental perspectives (the perspective of sustainable development), at the same time it spread environmental indicators to the other perspectives of the BSC. Similarly, Epstein and Wisner (2001) agree with the idea of including the environmental indicators in the four perspectives initially proposed by Kaplan and Norton. However, they think that whenever the company holds an environmental management department, a specific BSC should be developed for that organizational unit, pointing out as an example the case of a pharmaceutical multinational acting in this way. Other authors, who still do not defend the creation of a new perspective, think that environmental issues should be integrated into one single perspective: the internal processes' perspective (Hubbard, 2009; Lämsiluoto and Järvenpää, 2010).

On the other hand, Campos (2001), in favour of including the environmental perspective besides the traditional perspectives presented by Kaplan and Norton, stresses that the set of indicators of environmental performance gathered in the same perspective should be lined up with the goals and targets of the other perspectives. As advantages resulting from this

option, Moro Prieto and Fernández Rodríguez (2003) defend the inclusion of a perspective related specifically to environmental aspects, which would help to determine the environmental goals better, to control the level of implementation and to carry out a better evaluation and analysis of the consequences emerging from its (in)compliance with the global goals of the organization. Including a fifth perspective in the BSC for environmental issues is also suggested by Figge et al (2002), who defend its creation when the company generates environmental externalities and consider that if the effects from environmental activities developed by the company are mainly internal, the indicators should rather be in the four traditional perspectives of the BSC. So, from this point of view, we share the scepticism of Monteiro et al (2003), due to the underlying difficulty in internalizing the environmental aspects.

However, there are authors who do not adopt a position concerning the two alternatives already discussed, but suggest other options. For example, Da Rocha et al (2001) advocate the inclusion of a new perspective (environmental perspective), which could interfere with the balance of the others, by stressing the danger of developing new indicators in the same perspective, leading to the parity of indicator numbers used in the four other perspectives. So, they propose a new model of the BSC for environmental management that considers six perspectives (legal, production, image, human resources, financial and I&D) that work in a cause-effect relationship, presenting the targets, goals, indicators and environmental initiatives for each of them. These authors consider that in this way it is possible to obtain a basic, balanced structure so that the organization can evaluate its environmental performance. On the other hand, López Viñegla and Llena (2006) focus on corporate social responsibility (CSR) (and not only on the environmental dimension) and argue that the BSC should integrate these issues not only as a balanced strategic line within the perspectives traditionally managed by the company but also as a fifth separate perspective. Anyhow, it would be necessary to obtain a BSC focusing on sustainable development, for which these authors agree with Dias-Sardinha et al (2002) and Gimeno Zuera et al (2005) in highlighting the purpose of adopting the triple bottom line perspective (social, economical and environmental) and using the environmental and social indicators proposed by the Global Reporting Initiative (GRI). In this regard, table 1 shows a few models for the BSC proposed in the literature and their changes to the original model of Kaplan and Norton.

Table 1. BSC models oriented to sustainable development

Dias-Sardinha et al (2002)	Gimeno Zuera et al (2005)	Changes to the traditional BSC
- Perspective value creation of <i>triple bottom line</i>	- Perspective of sustainable development	Substitutes the financial perspective, considering, besides the financial-economic aspects, social and environmental aspects aiming for long-term global value creation.
- Perspective of <i>stakeholders</i>	- Perspective of groups of interest	The perspective of customers is expanded in order to meet the information needs of different <i>stakeholders</i> . According to Álvarez Etcheberria (2005), this expansion is based on the <i>Stakeholders' Theory</i> , which considers that any group of interest can influence the performance and future of the company.
- Perspective of processes	- Perspective of internal processes	Besides keeping the same name, this perspective also includes the processes that contribute to the satisfaction of the different groups of interest by incorporating social responsibility criteria and environmental management.
- Perspective of learning	- Perspective of growth and learning	Besides keeping its name, this perspective also considers social aspects in order to ensure the achievement of the targets established in the previous perspectives.

The model designed by Dias-Sardinha et al (2002) is more advanced than that of Gimeno Zuera et al (2005) and already has a set of indicators to be included in each

perspective, designed together with those proposed by the Global Reporting Initiative (GRI, 2002) in order to facilitate the disclosure of the environmental, social and economic performance of the company. In addition, Dias-Sardinha et al (2002) defend the development and implementation of the BSC from the top management to the organizational units and individual departments. Both models have been validated in samples from companies operating in Portugal and Spain, respectively. Thus, while Dias-Sardinha et al (2002) and Dias-Sardinha and Reijnders (2005) chose a set of large companies operating in Portugal as their study object, Gimeno Zuera et al (2005) applied their model to a large group of Spanish companies dedicated to exploring and producing oil and natural gas (Repsol YPF).

We share the opinion of Blanco Dopico et al (1998, 2000), who consider that the choice among the different alternatives proposed for the inclusion of the environmental variables in a BSC model will depend on the weight that such variables have in the set of critical success factors and elements of organizational decisions, which is related to the degree to which the business activity affects (directly or indirectly) the natural and physical environment, the level and intensity of pressures for better environmental performance and the environmental strategic position chosen by the company. In this regard, Zingales and Hockerts (2002) conducted a study on business experience regarding the inclusion of environmental and social issues in the BSC, the results of which show a certain diversity between companies regarding the chosen method to integrate the environmental variables into their BSCs, although the main trend is to use environmental indicators distributed among the four perspectives of the BSC.

#### 4 Balanced scorecard: adaptation to environmental public management

In the public sector, although the evolution of the management of environmental performance has not acquired the same dimension as in the private sector, its measurement is an important component of administrations' environmental strategies for sustainable development (Ramos et al., 2007 and 2009; Lundberg et al., 2009), and there are several initiatives for the development of environmental indicators in the public sector, for example, the Organisation for Economic Co-operation and Development (OECD, 1993) and the European Environment Agency (1999). It is necessary to consider that the environmental or ecological indicators implemented in public administrations should achieve a double goal: on the one hand, to allow the analysis of the environmental management of the company; on the other hand, to control the correct use of public funds for environmental purposes. Based on this idea, Young (1996) proposes four key areas for environmental efficiency within an organization that could be used for developing different measures or indicators (figure 1).

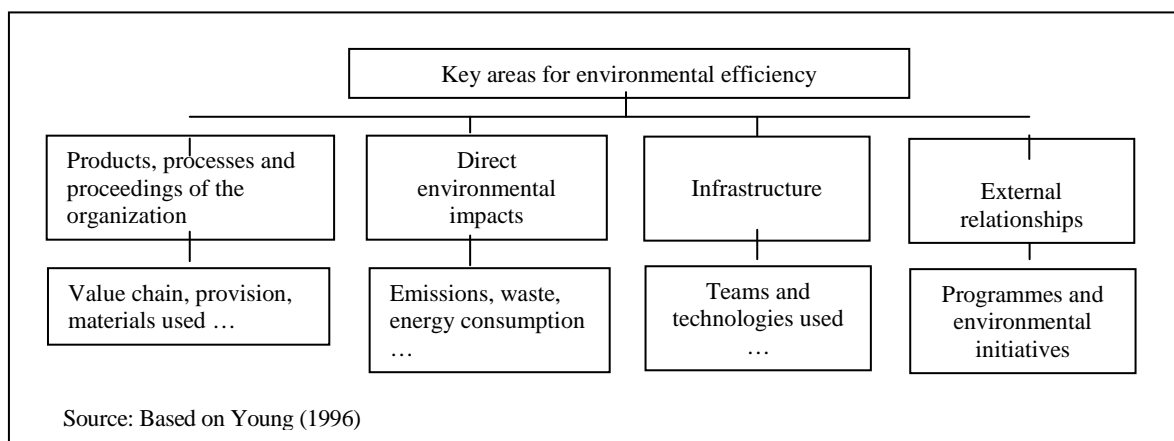


Figure 1. Key areas for environmental efficiency in a public entity



As in private companies and other areas of public management, management accounting can play an important role in public entities by allowing them to evaluate, through performance indicators, the impact of their actions on the environment (Montesinos Julve, 1999). These measures combine internal and external data of a financial and economic nature and of an environmental and social nature. For this reason, in order to make them easier to understanding and to avoid overloaded information because of excessive measures, the indicators are often integrated into different models that allow global evaluation of organizational performance, mainly the BSC.

In this regard, in spite of the model developed by Kaplan and Norton being designed to evaluate the performance of private companies, several authors defend the idea of applying it to the public sector in general (Kaplan and Norton, 2001a-b; Niven, 2003; Bastidas and Feliu, 2003; Silva Filho and Rodríguez González, 2004; Carvalho and Marques, 2006; Pinto, 2007; Rossum and Kober, 2008; Thoradeniya et al., 2008) and to local government in particular (Kloot and Martin, 2000; Quinlivan, 2000; Ho and Chan, 2002; Chan, 2004; Wisniewski and Olafsson, 2004; Yetano, 2005; Farneti, 2009; Guimarães et al, 2010). In this regard, although the implementation of the BSC in public administrations with non-profit intentions has not improved in the same way as in the private sector, there is empirical evidence that the pressures on the public sector (Wisniewski and Olafsson, 2004), mainly on local governments, to reduce public expenses and increase competition and responsibility to society justify the adoption of a system to evaluate performance and strategic management such as the one represented by the BSC.

Nonetheless, in the case of public entities it is necessary to adapt the model of the BSC to their characteristics, particularly in relation to the differences between public and private management (Pinto, 2007). Consequently, since the mission–vision and strategy are the main concepts to consider in developing and implementing the BSC, the process of adapting the original BSC model to the public sector requires previous adjustment of the meaning of these concepts to the reality and specificities of public administrations. In relation to the private sector, Silva Filho and Rodríguez González (2004) contend that the general mission of the state lies in seeking the maximum comfort for the community or society in which it is established and respecting people's rights and personal guarantees (including the right to an unpolluted environment). Besides, the strategy refers to the particular path chosen by each entity in order to achieve its goals so that, depending on the vision of the organization about its role in society and the way to perform it, different action strategies can arise.

In this sense, the proper strategy clarification is pointed out by the literature as one of the main difficulties in developing a BSC model in any kind of organization, which becomes a bigger problem in the case of public entities with non-profit intentions. Unlike the private sector, these entities do not focus on maximizing the value for investors and obtaining economic benefits, but mainly seek the maximization of value for the citizens and society they serve (Kaplan and Norton, 2001a-b). Therefore, the definition of the mission of a public entity should be based on the consideration of the needs of its groups of interest, including all the agents of the community. Consequently, the literature is unanimous in establishing the need for a new design for the perspectives of the BSC primarily proposed by Kaplan and Norton to suit the characteristics of public entities. In fact, a simple analysis of the content of each BSC perspective reveals substantial differences between a BSC applied to a company and a BSC applied to a public entity (Pedro, 2004). However, while some authors maintain that the BSC should be applied to the public sector through the maintenance of the four original perspectives only by introducing a few conceptual adaptations and changing the order in which they appear in the model, others present us with structural changes and consider it necessary to suppress, include or detach the original perspectives in order to adapt the model better to the characteristics of the public sector and the new public management.

Thus, considering public entities' mission, the BSC should increase the role of the client and reduce the weight of financial indicators (Niven, 2003). In turn, Kloot and Martin (2000), focusing on local administration, consider that since their actions affect not only the direct users of council services but also the community (citizens, companies, associations, etc.), the customers' perspective on the original BSC model should be extended by adopting a global approach for the entire community. Yetano (2005) argues that adapting the BSC to the local public sector should reflect not only the different groups of interest for each entity but also the non-profit character associated with the development of its activities. Consequently, he proposes the substitution of customers' and financial perspectives for the budget perspective (as a limiting factor for the company's capacity of action) and community. Also, Silva Filho and Rodríguez González (2004) consider the substitution of the traditional perspective of customers for the community perspective, but they also add two new perspectives: governance and legal framework. According to the authors, the first should reflect the political character of public activity as well as the existence of the sometimes divergent powers that influence it, while including a legal structure perspective is associated with the legal focus on the public activity.

Table 2 refers to some of the propositions for adapting the BSC model to the public sector in general and to the local public sector in particular.

Table 2. Propositions for adapting the BSC model to the public sector

<b>Traditional BSC perspectives</b>	<b>BSC perspectives adapted to the public sector</b>	<b>BSC perspectives adapted to the local public sector</b>	
Kaplan and Norton (1992)	Silva Filho and Rodríguez González (2004)	Kloot and Martin (2000)	Yetano (2005)
<ul style="list-style-type: none"> <li>- Financial</li> <li>- Customers</li> <li>- Internal processes</li> <li>- Learning and growth</li> </ul>	<ul style="list-style-type: none"> <li>- Financial</li> <li>- Community</li> <li>- Internal processes</li> <li>- Learning and growth</li> <li>- Governance</li> <li>- Legal framework</li> </ul>	<ul style="list-style-type: none"> <li>- Financial</li> <li>- Community</li> <li>- Internal processes</li> <li>- Learning and growth</li> </ul>	<ul style="list-style-type: none"> <li>- Budget</li> <li>- Community</li> <li>- Internal processes</li> <li>- Learning and growth</li> </ul>

As we can see, the community perspective is common to the various proposals for the adaptation of the BSC to the public sector; besides, we consider that the community is the centre of the BSC design (unlike private companies, in which the financial perspective dominates the BSC's structure), since the final purpose of public entities is to achieve greater satisfaction and well-being for the society. On the other hand, the purpose of the financial perspective of public administrations is not to reflect the level of achievement of profit goals and financial results (since there are no profits, these aims have no place in this kind of entity), but its inclusion would be motivated by the need to reflect the budget restrictions that influence public management and the indicators related to budget management.

Implementing the BSC in public entities provides different advantages, such as allowing the improvement of efficiency and efficacy of such entities, guiding planning and strategic management (forcing the incorporation of planning processes and budgeting with a defined strategy) and allowing continuous improvement of the performance of the organization and the implementation of benchmarking programmes by comparing its performance with the performance of similar entities (Yetano, 2005; Carvalheira and Marques, 2006). Furthermore, according to Carvalheira and Marques (2006), implementing the BSC in public administrations requires the involvement and participation of the entire organization, becoming an important factor of management, cultural and organizational change. However, an inadequate use of such a tool can lead to the implementation of separate and unconnected indicators that would not make it possible to make the most of the advantages and potentialities, presenting or leading to dysfunctional behaviours, which make

it difficult to achieve the goals or to develop the entity's strategy.

Since the original BSC model presented by Norton and Kaplan does not include the environmental dimension, as we mentioned, the literature on the private sector is unanimous in considering the need for integrating environmental indicators into that model. Regarding the public sector, some authors consider the environmental variable in the BSC model, namely by adapting it to the specificities of public entities. Thus, Bastidas and Feliu (2003) propose a BSC model adapted to the public sector, which considers environmental variables apart from other aspects. The model proposed by these authors innovates by dividing the customers' perspective into three parallel perspectives – users, community and environment – settled on a higher level within the BSC structure. On the other hand, this model replaces the perspective of learning and growth for the human perspective, which includes goals relating to the generation of values for an organization's human resources; that is, it deepens the social dimension of organizational performance.

Figure 3 represents the BSC model that, according to Bastidas and Feliu (2003), should be implemented in public organizations, which takes into consideration the environmental variable.

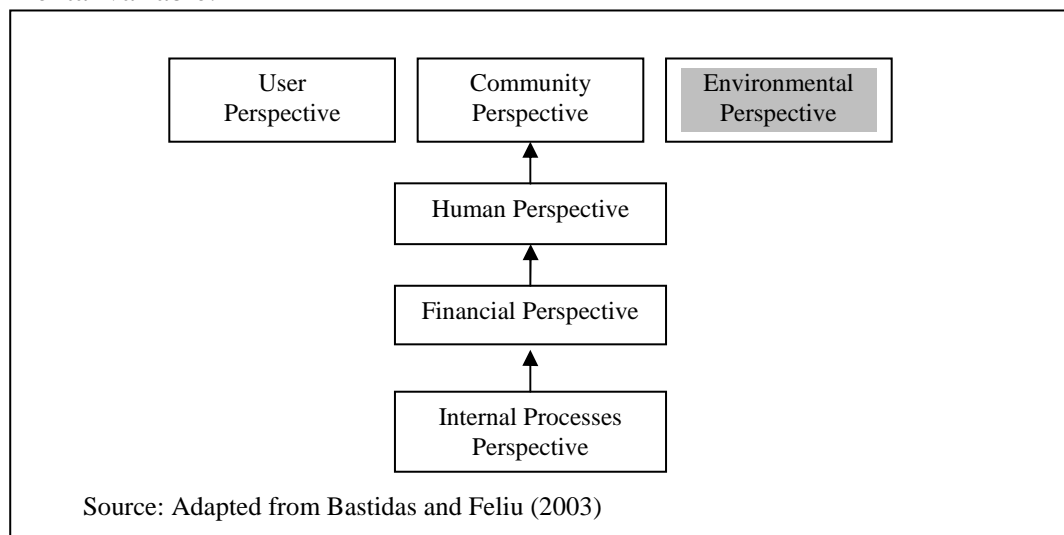


Figure 3. Adaptation of the traditional BSC to public entities

According to the authors, this model would enable public entities to satisfy the community (by contributing to its general well-being), users (through the services provided) and employees, besides contributing to the protection of the environment and being responsible to fiscalization entities for the adequate management of public resources. Silva Filho and Rodríguez González (2004) agree with the distinction between user and community since they argue that sometimes the particular interests of the direct receivers or beneficiaries of public services might be opposed to those of the set of community (society), leaving it to the state to decide on the most important interests or goals. Regarding the environmental perspective, these authors believe that, in spite of its importance, it should not be an independent perspective since environmental preservation is one of the most important values and goals for society, so a few environmental indicators should be included within this perspective. Moreover, the authors defend that the internal processes perspective should reflect public entities' efficiency not only regarding the quality of the provided services but also regarding the costs (that is, regarding rationalization and the use of resources) and the impact on the environment caused by their action. Similarly to Silva Filho and Rodríguez González (2004), Kloot and Martin (2000) do not consider it necessary to include a specific perspective in order to measure the environmental performance of public administrations

without including the compliance with laws and environmental protection within the various attributes that should be considered for the community perspective.

In our case, we argue that regardless of the adopted solution for a public entity to include the environmental variable in the BSC model, such inclusion should constitute an integrated and coherent informative basis for both internal and external communication. This would make it possible to analyse the entity's activity globally, which would bind strictly environmental considerations with other aspects, of both a strategic and an operational character, and would avoid any possible bias in decision-making or in performance assessment (Maside Sanfiz and Aibar Guzmán, 1999).

## 5 Conclusion

Given the wide-ranging functions and responsibilities of public entities regarding the protection and preservation of the environment, it is necessary to develop measures and tools in order to help plan, manage and control their environmental activities. In this sense, the development and implementation of practices of environmental management (such as SGMA) by local entities are the key instruments for obtaining a performance compatible with sustainable development, allowing not only the continuous improvement of the entity's environmental performance but also the acquisition of useful environmental information.

As in private companies, the accounting information system of public entities can play an important role in leading and strengthening the organizational, management and cultural changes resulting from the acceptance of environmental responsibility through the provision of information that allows the evaluation of their environmental performance. In the internal field, the development of indicators is often carried out to support environmental management, suggesting its integration into the BSC model. The BSC emerged within the business world and has developed and improved upon that reality. Nonetheless, when adapted to the specificities of the public sector, the BSC is a valuable tool that promotes the introduction of a strategic perspective into public entities. Regarding especially the environmental indicators, the literature establishes various possibilities for integration into the BSC, such as: distributing environmental indicators among the four traditional perspectives of BSC; creating a fifth perspective for indicators regarding the environmental dimension; reformulating the original perspectives of the traditional perspectives but keeping the number of perspectives.

In the public sector, whereas financial aspects are not the most important ones, using the BSC model requires a horizontal view of the processes and an orientation towards the community. As in the private sector, the literature regarding the integration of environmental indicators within an independent perspective is not unanimous. However, there is no doubt that adapting Kaplan and Norton's model to the public sector requires double attention: on the one hand, because it is necessary to adapt it to the specificities of public entities, and on the other hand, because the environmental aim of such entities is different from and wider than in the private sector, which demands an adequate approach at the time of BSC implementation into a public entity.

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