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The ICZM Balanced Scorecard: A tool for putting integrated coastal zone management into action

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ABSTRACT

Coastal areas are characterised by the choice of performance measures and/or reference points which may be critical in the environmental management process, determining the success of an Integrated Coastal Zone Management (ICZM) plan. The tools for the strategic control of ICZM plans are particularly important, although they are still not widely used at the local level. The following paper proposes the use of the Balanced Scorecard (BSC) method of Kaplan and Norton (1992), which is a holistic management performance tool that can be used by managers to put into action their business strategy. In particular the methodology has focused on the use of a BSC process, inspired by the Niven (2003) approach for public bodies. The BSC suggests the creation of a framework for the strategic assessment of plans and projects based on the Protocol on Integrated Coastal Zone Management in the Mediterranean (Protocol). An analysis of the Protocol has been carried out according to the BSC model, and it shows how it can be integrated with assessment and environmental management tools, such as the Driving forces, Pressures, States, Impacts and Responses (DPSIR) framework. The proposed process has suggested a novel framework for analysing the ICZM plans of coastal managers and stakeholders. The analytical framework facilitates the examination of Drivers and causes of the ICZM strategy, the possible impact on society and coastal communities, the most appropriate measures to achieve the objectives and the practicalities of implementing such measures given the institutional context of where these are developed.

1. Introduction

The implementation of policies and instruments are aimed at the transformation of ecological awareness as the effective management of coastal natural resources is increasingly complex [1,2]. In particular, Integrated Coastal Zone Management (ICZM), as defined by the European Union, is expected to result in actions that will lead coastal communities to develop economies that can bring their areas to life by managing natural resources in a sustainable manner [3,4].

The measurement of the effectiveness of a management system requires performance measures that have easily comparable goals [5,6]. Halliday et al. (2001) defined performance measures as "a class of indicators influenced by managerial actions and able to measure success in organisational improvement programs" [7]. According to most current views on local coastal systems, the industrial dealings between enterprises, the habitat, and the socio-economic activities that take place in the environment should be reviewed [8–10]. To guide policies of environmental sustainability, both public and private organisations have adopted environmental management systems (ISO 14000, EMAS) to assess environmental performance for coastal zones [11,12]. The need for government agencies to choose an appropriate tool to assess the environmental strategy planned as the result of a strategic development policy should be seen as part of a strategy for the management of the risks and opportunities in regional coastal areas [13,14].

In general, the instruments of environmental policy used for territorial management are intended to mitigate environmental pressures that could prove unsustainable in the long term, not only from an environmental perspective but also from an economic and social perspective [15–17]. The quality of the strategy formulation for ICZM is closely linked to diverse information such as operational asset management, scientific knowledge of the area and the needs of the recipients of services. These data, when properly analysed, allow the trends in the coastal area to be reviewed and hypotheses to be formulated about possible future scenarios [16,18–20]. Over the years, there have been numerous frameworks for the environmental management of ICZM plans, and at various levels these have contributed to improving the knowledge of coastal systems [21–25].

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This paper shows how, with appropriate adaptations, the Balanced Scorecard (BSC) model, proposed by Kaplan and Norton in 1992 has been applied as a tool for the strategic management of ICZM plans. This methodological proposal examines the possibility of the BSC being adopted as a tool to support the management and control of examples local ICZM plans (e.g., municipal plans, district plans, regional plans) [26,27] that are based on the Protocol on Integrated Coastal Zone Management in the Mediterranean (Convention on the Protection of the Marine Environment and the Coastal Region of the Mediterranean), which was signed in Madrid on 16 January 2009 and came into force on 24 March 2011, in accordance with Article 39 [28]. The Protocol on ICZM in the Mediterranean Sea (Protocol) is in accord with the European recommendation on the integrated management of coastal areas of including the Mediterranean (EC Recommendation) [29].

After this, the paper is structured as follows: at first, an overview of the generic approach (from Kaplan and Norton) on the Balanced Scorecard Approach is presented. Then, the paper highlights some shortcomings of existing ICZM indicators and evaluation techniques, and it also shows the methods on BSC application to ICZM and the use of the Protocol. Moreover, the structure is explained, focusing how several parts of the BSC are linked to the Protocol. A discussion on the key aspects of the implementation of a BSC in the ICZM plan comes before the conclusion: here, final assumptions are put forward on the possible wider application of the BSC as a performance management tool to promote and support the marine policy concerning the ICZM.

2. The Balanced Scorecard approach – an overview of the generic approach (from Kaplan and Norton)

The management theories of Michel Porter have spread the culture of value generation globally [30]. In 1996 Kaplan and Norton [31] developed the concept of the BSC as an integrated management system. The principal purpose was to incorporate both traditional quantitative and more abstract qualitative performance measures, with the aim of translating the business strategy into action. In general terms, the BSC can be defined as a management system inspired by the "plan-do-check-act" cycle. The BSC is a management system and not a measurement system, but measurements are an important aspect of it: measurement is a means of setting and achieving the strategic objectives for an organisation through the adoption of concrete initiatives.

The BSC has been developed to measure the following four perspectives: financial, customer, internal business processes, and learning and growth. A system of measures is used at any time to assess and characterise the current status and future potential of organisations. Moreover, the perspectives foster a balance between short- and long-term strategic objectives, between desired outcome measures and the performance drivers of those outcomes, and between quantitative–objective measures and qualitative–subjective measures.

The key concept of the BSC is the differentiation between performance drivers (which respond to the questions "Who should do it?" and "How should we intervene?" and are related to the management strategy of the ICZM plan) and outcome measures (which respond to the question "What should we look for?" and are used to control both the financial system and the social and environmental performance of the ICZM plan) [32].

In its early logical representation, the BSC was represented as being cross scheme (Fig. 1) to explain its multilevel measuring capability. The authors, over the years, have preferred to represent the BSC in a sequential scheme, named the "Strategy Map", for the best representation of the business strategy. The Strategy Map presents the cause and effect chain between the Outcome expected and the Driver of the future performance. At the top of the Map is shown the financial perspective representing the ultimate results. The other Perspectives are represented by the performance Drivers used to achieve the desired results. The assumption is that the performance Drivers are factors that are internal to the system and are directly controlled by the actors involved in the process. Accepting this paradigm, stakeholders can potentially, through their conduct, influence the Outcome and consequently determine whether a good or poor state of an organisation occurs – in the case of the latter because it was not controlled by a solid management system. From this perspective, a delay in achieving results is directly controlled by the management through a balanced assessment of indicators and Outcomes

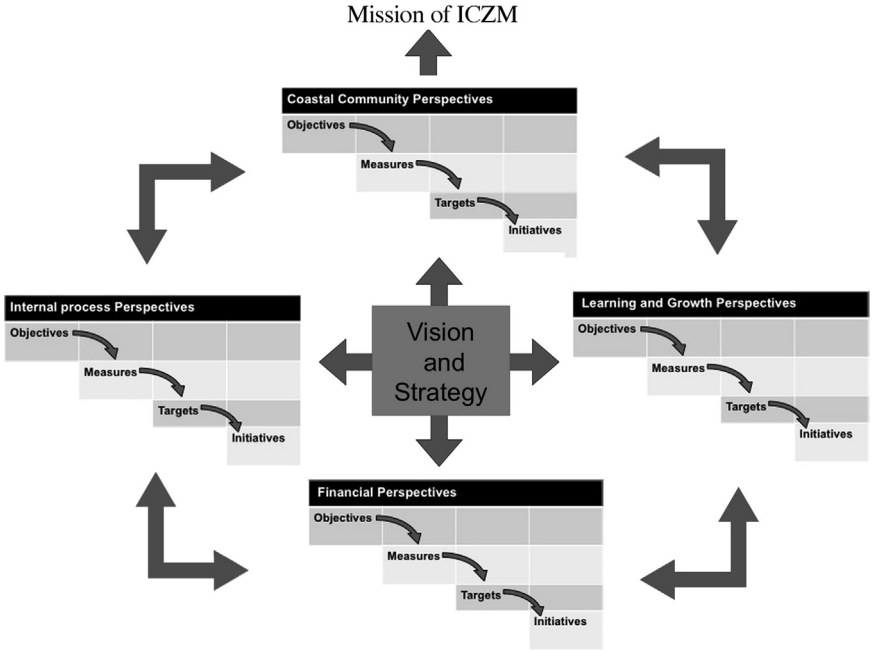

Fig. 1. BSC for measuring design performance (adapted from Kaplan and Norton (1992)).