

## ENVIRONMENTAL SUSTAINABILITY AND SOCIAL RESPONSIBILITY AS NEW CORPORATE STRATEGIC DRIVERS: A PROPOSAL FOR AN ACCOUNTING EVALUATION BY THE POLIED(RO) RESEARCH PROJECT

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**Abstract:** *Aim and topic of the paper is to formulate a theoretical model for an accounting evaluation applied to environmental sustainability and social responsibility, that the present international crisis shows as two new corporate strategic drivers. To achieve this goal the paper presents an approach that follows an Italian research project entitled POLIED(RO): the study tries to accommodate the main suggestions of the International Accounting Standards and the final result tries to propose a model oriented towards the overcoming of the neutrality between the traditional accounting values and those derivable from social and environmental reports realised by the corporate system.*

**Key words:** Environmental Sustainability, Financial Accounting, Green Accounting, International Accounting Standards, Corporate Social Responsibility

**JEL classification:** M14, M16, M41

### 2. Introduction

During the last years the updated approach oriented toward a sustainable system has produced many world-wide experimentations, starting working on a deep reflection on how to incorporate macroeconomics by environmental and social parameters (Stiglitz et al., 2009). This need felt at the level of the European community is reproduced in the document of the European Commission “*GDP and beyond: Measuring progress in a changing world (Action Plan)*”, where it is stated that: “*(...) Gross Domestic Product (GDP) is the best known macro-economic measure of the performance of the market economy of a nation. Although by design and purpose it is not a welfare measure, it has also come to be regarded as a proxy indicator for overall societal development and progress in general. GDP does however not measure environmental sustainability or social inclusion and these limitations need to be taken into account to find adequate solutions to steer our economies (...)*” (EC, 2009).

The idea of sustainable development – first introduced in 1987 by the World Commission on Environment and Development (WCED) – is defined as “*(...) the economic and social development that doesn't compromise the environment and the natural resources the continuation of human species and the future development depend on (...)*” (WCED, 1987). Starting from this definition it was possible to explain sustainability in three different ways: “*(...) 1) environmental sustainability: the ability of preserving the quality and the reproducibility of natural resources; 2) social sustainability: the ability of assuring human welfare and growth opportunity respecting human rights and labour law; 3) economic sustainability: the ability of creating incomes, profits and stable and durable jobs (...)*” (CNDCEC, 2009). The issue under consideration concerns the accounting measurement applied to these new intangible assets (environmental sustainability and social sustainability) in the annual report (or budget) and may have as reference the following International Accounting Standards: a) for the Private Sector the main IAS/IFRS documents are: IAS 36 Impairment of Assets (it deals with impairment testing for all tangible and intangible assets, except for assets that are covered by other IFRS) (IASB, 2010); IAS 38 Intangible Assets (IASB)

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(IASB, 2009); for the Public Sector the main IPSAS documents are: IPSAS 21 Impairment of Non-Cash-Generating Assets (IPSASB, 2004); IPSAS 31 Intangible Assets (IPSASB, 2010).

However, looking at the main international accounting standards on this issue, a neutrality emerges between the results of the traditional reports and those concerning the social and environmental analysis realised by the companies: the mentioned idea of neutrality is that the information in the traditional reports is not directly influenced by the environmental and social variables highlighted by social reports, environmental reports and sustainability reports (etc.). In other words, the financial and the accounting information enclosed to the traditional final statement isn't directly influenced by the one enclosed with the environmental and social reports: the only link is that the environmental and social reports use the data produced by the traditional reports and elaborated by appropriate systems of accounting surveys.

The scientific objective of the project is to create an index based on a range of different criteria, combining the various aspects of sustainability with current market demands. The index, entitled POLIED(RO) (transl. POLYHEDRON) [POL Pollenzo (note: Pollenzo is the town which houses the headquarters of the unit research leader, the University of Gastronomic Sciences; for more information see at [www.unisg.it](http://www.unisg.it)), I index, E environmental and economics Design] (the project period started in December 2009 and will end in December 2011), is based on a variety of different aspects, all of which possess the same scientific weight in the index, and all of which have at least one thing in common with the others. The general aim of the index is based on three observations (Piedmont Region, 2009):

- 1) the fact that existing standards can be difficult to interpret, and the presence of an increasing range of certification without adequate consumer knowledge, has generated confusion for consumers. This uncertainty means that consumers do not therefore take these standards into account when making their purchases;

- 2) the demand for a "*return to the past*", namely consumers' desire to rediscover historic products connected to the traditional cuisine of a given area, representing an innate tourist attraction for the area, but also a cause for greater attachment to the area among those who live there and exhibit an increasing desire to rediscover time-honoured traditions and products;

- 3) safeguarding the environment and landscape. With reference to the most widely used voluntary certification systems, and product standards in particular, often these are only relatively successful, due to bureaucratic problems and a poor market response. These voluntary systems of process certification (ISO14001 and EMAS) implemented by local bodies, guarantee control of environmental aspects. In order to tackle these demands, which can become pressing in view of the fact that in some cases they prevent the certification mechanism from being effective, and in order to forge a closer bond with the local area by means of feedback.

The potential impact of the project consists in fostering increasing attention to product and local area sustainability among the institutions and the population. The aforementioned bureaucratic problems that standards encounter have often prevented them from being adopted by producers, and even when a certification process is initiated and completed, the widespread lack of knowledge, and sometimes also the costs involved, have prevented the general spread of these standards. The idea is to connect these virtuous, often isolated examples to the local area, by means of a mechanism based on a system to manage the organization of research and resources (which are complementary yet diversified) to arrive at the creation of the index in question. This will then be returned to the local area, with the application of at least some of the aspects of the environmental/landscape management system (Piedmont Region, 2009).

The joint use of these tools, the high degree of flexibility planned for the index, and the multidisciplinary nature of the project from its outset should represent a sort of guarantee of results, in view of the fact that in the organizational process and at the various stages of the project, nothing is left to chance. Moreover, the planned trial of the index in the Piedmont region could come to represent an exemplary point of departure, and a model for other regional areas, in Italy and elsewhere, interested in the index. The POLIED(RO) index results in fact constituted by manifold

field of study, all pertaining to the index with the same scientific weight, all interconnected and having at least one side in common: the accounting approach followed in the research is explained in the following paragraph.

### **3. The accounting approach followed in the research project**

During the last years, the topics of innovation and measurement of the results is assuming a progressively higher relevance with perspectives of sustainable promotion of the local and regional development. The increasing debate over the process of globalization (and of glocalization) (McLuhan, 1989; Nederveen, 2004; Robertson et al., 2003) and, at the same time some others drivers, like as the awareness of the important role that the innovation can assume in the economic and social development of Italy and the new demands shown by stakeholders, have stressed the need, for what pertains the activities related to the food and agricultural compartment, to develop and to use evaluating tools more precise and shared. In this way, the experience of other Countries and the related literature on the aforesaid issues underline that the substantial activation of both evaluating and innovative tools generally bring interesting benefits. Nevertheless it is to underline that such processes, when not properly developed, addressed and understood, can bred distortions on the same assessment activities (Piedmont Region, 2009). Moreover these evaluating activities can shape interesting opportunity to stimulate both the link with the paradigms coming from other disciplines and the process of internationalization of the business studies related with the issue of food and agricultural compartment.

In the light of the general objectives of the project, the contribution priority focuses on the economic evaluation sustainability – in general sense – applied on food and agricultural compartment through the work out of a “cause-effect” analysis model of the processes of production, distribution, sale and consumption of the food and agriculture commodities, directed on two profiles of analysis:

- the sustainability of the process, in different configurations that characterize it: social, environmental, etc.;
- the responsibility for the action of players (accountability) and the results policy asseveration related (assurance engagement policy).

Under the first profile of research, in an wider and above all in a much more “sustainable” vision of the food and agricultural compartment, the main purpose of the present contribution is, therefore, to identify, systematize and implement into the process of the compartment the informative tools pertaining the model of the Corporate Social Responsibility (CSR) (Ackerman et al., 1976; Carroll, 1979; Sethi, 1975; Wood, 1991). About the second aspect of research the main purpose of the model is to define a matrix of common valuing elements, related to the accountability and assurance engagement policies, that can be taken as reference in the sector of the integrated food and agricultural compartment. Therefore the present model wants to represent one aspect (the one purely business economics oriented), of the wider scientific objective of the whole project, that is to create a multi-criteria index that gathers in its own lay-out the aspects of the sustainability applied to the processes of production, distribution, sale and consumption of the food and agricultural commodities (Piedmont Region, 2009).

The POLIED(RO) index results in fact constituted by manifold field of study, all pertaining to the index with the same scientific weight, all interconnected and having at least one side in common.

The aim of the present theoretical study is related to a theory concerning accounting model that can farther reinforce the connection between the different accounting models defined by a mutual exchange process of information flow in which:

- the environmental and social reports can, on one hand, acquire the economic information they need to edit their own documents from the traditional reports;
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- on the other hand they can be in a position to reallocate the environmental and social performance previously got in the traditional final statement, influencing – in a direct way – the accounting results.

In this case the financial statement should become an independent governance instrument used by the company (public or private) to be accountable to its stakeholders of the results of its environmental and social policies realized in a sustainable development perspective: at the present moment several companies use dedicated documents regarding the environmental and social communications, such as e.g., social reports, environmental reports and sustainability reports.

The International Accounting Standards – mentioned above – present an accounting model where the financial, economic and patrimonial information enclosed with the traditional final statement isn't directly influenced by the one enclosed with the environmental and social reports: the main link is that the environmental and social reports use the data produced by the traditional reports. In the environmental public report models – see, e.g., the European CLEAR Model “City and Local Environmental Accounting and Reporting” or the one suggested by the Italian Institute for Environmental Protection and Research (ISPRA, 2009) – two different cluster of accounts (Giovannelli et al., 2000) are expected to be used (CLEAR, 2003): a) the first cluster is called Physical Accounts: it is related to the monitoring of air emissions and to the material consumption: e.g. the set of 10 European Common Indicators (ECI) is the most common Physical Accounts cluster used at European level and it has the focus of having indicators capable of measuring not a specific phenomenon, but the overall sustainability at a local level; b) the second cluster is called Monetary Accounts: it concerns the money that a public institution has to invest in the environmental protection.

Only the Monetary Accounts have an accounting derivation because the company fixes them toward a reprocessing of balance (budget plan and/or final balance): this reprocessing is the only one-way link between the two types of reports; equally it is not possible to have a parallel (and opposite) process where the final statement results could be – directly – conditioned by the performance got from the environmental report in a positive way (eco-efficiency) or negative trend (eco-inefficiency). Similar consideration can be made talking about the traditional social report models related to the public company (G.B.S., 2005) or to the private sector (G.B.S., 2001): during the last years the Italian Accounting Standards have used the Added Value as a referential quantitative indicator.

For the Italian Accounting Model the Added Value is considered very important in the social report field (Gabrovec Mei, 2002): the Added Value measures the wealth produced by the company with reference its shareholders that participate to the distribution of the wealth itself. Added Value is represented in two different tables: the table for the calculation of Added Value, identified by comparing interim revenues and costs (G.B.S., 2001: 21); the table showing the allocation of Added Value being the summation of the remuneration received by stakeholders within the company and the donations (G.B.S., 2001: 24).

In the document of the G.B.S., mentioned above, the table for the calculation of Added Value the articulated opposition between the positive and the negative elements involved in the working capital that come directly from the economic – financial accounting system of the company.

In both examined cases – the assessment of the Monetary Accounts in the environmental report and the Added Value determination in the social report – a common accounting derivation of the values is recorded: both of them are determined by a data reprocessing of the final statement of the company, but they can not able to reallocate the environmental and social performance previously found in the final statement of the company.

The central part of the study has the aim of suggesting a theoretical accounting model able to go beyond the informative limit (definable now as one-way informative flows) and where it can be possible to create a bi-directional link between the report models (an environmental and social one on one hand and a traditional one on the other hand): this model should have a reciprocal

exchange of the informative flow where the environmental and social reports can acquire the economic information they need from the traditional report, and – then – they can reallocate the environmental and social performance they got in the final balance, directly influencing the accounting results. The most virtuous companies from the point of view of environmental sustainability and social responsibility should deserve an award: a new intangible asset, a new “social-green goodwill” (André et al., 2009; Johnson, E.R., 2010; Kriström et al., 2003) having in return a equity increase of the company.

The present accounting model, that introduces a new intangible asset in the balance sheet as a reward to the most virtuous companies from the point of view of environmental sustainability and social responsibility, presents the following problems: 1) determining the composition of the board responsible for evaluating; 2) defining the evaluation process phases; 3) evaluating of environmental and social performances. Some proposal to the aspects mentioned above are outlined below.

1) Determining the composition of the board responsible for evaluating. About the first point, determining the composition of the board responsible for evaluating, the board may be: a) an internal board; or b) an external board (recommended choice). In the case of an internal board the components are represented by internal employees (or consultants) of the company subject, while in the second case (external board), the model would require: a) to chose an external and independent board in order to avoid the self – reference risk of the process realised by the company; b) to find the auditors in the professional categories having more ability both in the field related to the accounting profession [accountants have to have the Certification (or Asseveration) of the accounts], or in the field related to the environmental audits, that is “(...) *activities intended to quantify environmental performance and environmental position (...)*” (CLEAR, 2003) [auditors have to check the Environmental Management System (EMS) of a company (public or private) to see if it has the mandatory requirements asked according to the international standards EMAS or ISO 14001].

The auditor’s opinion should be independent, according to two aspect of the problem. The first aspect concerns the choice of the target in charge of the evaluation, that shouldn’t be the responsibility of the company, but – in order to limit the discretion – should be the responsibility of the central administration (such as the Ministry of Economy or the Ministry of Environment) or of a local administration (such as, e.g., the Court that has territorial jurisdiction, or the local office of the Court of Auditors, etc.). The second aspect regards the ways of payments of the auditors: instead of a direct payment between the company and the auditor, it should be used an indirect way between the central (or local) administration and the auditor (in this case the environmental fiscal system adopted by the single nation should provide for a correct reallocation of the resources needed to assure the correct payments of the auditor’s activities). In both cases mentioned above (evaluation by an internal board or an external board), the model would require a national or regional coordination achieved by a public institution (a central or local administration).

2) Defining the evaluation process phases. This step concerns the freedom of joining the evaluation process in the early on: the freedom of choice should be limited to the years after the first evaluation accession in order not to enforce the “budget policies” of the environmental and social performances. The adhesion to the evaluation process should be guaranteed by pre-emptively definite cycles (for example three-year cycles or five-year cycles) and the choice of exiting the evaluation process after a cycle should be at least as long as the length of the attended cycle in order to avoid a periodicity adhesion which is convenient to the evaluation process: once the minimum exclusion period is over, the company should be able to join the next evaluation processes of its environmental and social performance, following the same rules described before.

3) Evaluating of environmental and social performances. The final point – Evaluating of environmental and social performances – can produce, respectively, two kinds of outcomes: a qualitative result or a quantitative result. A qualitative result – as a qualitative assessment of the company – may be achieved by administering a questionnaire: it is the case realised by an internal

board above mentioned (this part of the research in working progress). The second case concerns the analysis of the companies from the point of view of environmental sustainability and social responsibility that should deserve an award, a new intangible value, above mentioned as “social-green goodwill”. This quantitative value can be analysed alternatively as: a) a non-accounting value (to say not included in the annual balance sheet); or b) an accounting value, a new accounting asset included in the annual balance sheet.

The methodological path to evaluate this new value (like a non-accounting value not included in the annual balance sheet, or like an accounting value included in the annual balance sheet) is shown in the following paragraph.

#### 4. The methodological path of the model

This paragraph is dedicated to present the discussion about the methodological path of the theoretical model that it is possible to divide into two parts:

- 1) the methodological path for evaluating the social performance;
- 2) the methodological path for evaluating the environmental performance.

The two parts are explained below.

- 1) The methodological path for evaluating the social performance.

The research of ways that have reference to social performance and are created by the company has the aim of finding those social shares able to underline what needs to be rewarded “more” than what has been made in the economic range. That being stated, in continuing the discussion, the components we need to isolate in order to quantify social politics that are actually virtuous, and therefore winning from the social point of view, should be referable to direct and indirect salaries of the subordinate employees with a long term contract: in the other circumstances, particularly in short term jobs, flexible jobs, etc., the nature of contract relations includes a priori that medium-long term planning so much wished – most of all for new generations – in the contemporary debate about the optimization of welfare models.

This argument finds solace in the definition made by the European Commission of social responsibility, as: “(...) *the voluntary decision of contributing to the progress of society and to the protection of the environment, combining social and ecological concerns in company dealing and in interactions with stakeholders (...)*” (EC, 2000): the increasing appeal to flexible job instruments, also in Public Administration and in our specific area of interest, the university, unfortunately doesn’t embody that spirit of cohesion and social welfare mentioned several times in the Community document cited before. The reflections done before have the purpose of bringing the attention to a delicate and complex theme, the flexibility in job market, that in our model depicts itself more and more like a physiological board towards a system structurally oriented on precariousness. A thorough reflection about the phenomenon – and about related corrective actions – is therefore appropriate, but is beyond the aim and the contents of this contribution: parallel reflections concern the coupling of these reflections to a model of management control oriented on the fundamental principles of efficiency, efficacy and company inexpensiveness. So the values of the social actions are to be isolated from those made voluntarily, in adherence to the above definition of social responsibility realised by the European Commission (E.C., 2000). Taking up our approach, the formula related to the quantification in the year (t) of the reward acknowledged for a social relevant behaviour, defined as Intangible Value Created by the Relevant Social Performance for Current Management ( $IVCRSP_{cm(t,s)}$ ) – placed under the assets of Immaterial Immobilizations with counterpart a net equity revaluation – could be written as:

$$IVCRSP_{cm(t,s)} = \sum_{i=1}^n (SC_{i(s)} * r_{(t-s)}) - \sum_{i=1}^n (SB_{i(s)} * r_{(t-s)}) \quad (1)$$

where:

- $IVCRSP_{cm(t;s)}$  = Intangible Value Created by the Relevant Social Performance for Current Management ( $IVCRSP_{cm(t;s)}$ ), quantified in the year (t) (year when the evaluation of social performances is realized) and related to the accounting year (s) (year when the Social Costs are paid and the Social Benefits are obtained);
- $\sum SC_{i(s)}$  = Sum of Social Costs (i) concerning the year (s);
- $\sum SB_{i(s)}$  = Sum of Social Benefits (i) concerning the year (s);
- $r_{(t-s)}$  = monetary revaluation rate (r) concerning the period between the accounting year (s) (year when the Social Costs are paid and the Social Benefits are obtained) and the year (t) (year when the evaluation of social performances is realized).

The monetary revaluation rate (r) used in the model, should be defined directly by the related set of rules, or indirectly referring to specific Prices Indexes for monetary revaluation produced by official national institutions (e.g. in Italy the Italian National Institute of Statistics – Istat) or by official international ones (e.g. in Europe Eurostat).

The same reflection concerns eventual patrimonial elements to isolate in order to quantify social policies actually virtuous, always referable to subordinate employees (like, for example, the capitalization of the costs of education and research, the construction of kindergartens and company refectories, etc.): also in this case, these accounts should be purified from possible subsidies collected in capital accounts for this purpose.

In this last case the formula of the quantification in the year (t) of the reward acknowledged for a social relevant company behaviour, definable as Intangible Value Created by the Relevant Social Performance for Asset Management ( $IVCRSP_{am(t;s)}$ ) – placed under the assets of Immaterial Immobilizations with counterpart a net equity revaluation – could be written as:

$$IVCRSP_{am(t;s)} = \sum_{i=1}^n (SA_{i(s)} * r_{(t-s)}) - \sum_{i=1}^n (SCB_{i(s)} * r_{(t-s)}) \tag{2}$$

where:

- $IVCRSP_{am(t;s)}$  = Intangible Value Created by the Relevant Social Performance for Asset Management ( $IVCRSP_{am(t;s)}$ ), quantified in the year (t) (year when the evaluation of social performances is realized) and related to the accounting year (s) (year when the Social Assets are paid and the Social Capital Benefits are obtained);
- $\sum SA_{i(s)}$  = Sum of Social Assets (i) concerning the year (s);
- $\sum SCB_{i(s)}$  = Sum of Social Capital Benefits (i) concerning the year (s);
- $r_{(t-s)}$  = monetary revaluation rate (r) concerning the period between the accounting year (s) (year when the Social Assets are paid and the Social Capital Benefits are obtained) and the year (t) (year when the evaluation of social performances is realized).

In conclusion, the quantification of the Total Intangible Value Created by the Relevant Social Performance ( $IVCRSP_{T(t;s)}$ ) in the year (t), is determined by the following formula:

$$IVCRSP_{T(t;s)} = IVCRSP_{cm(t;s)} + IVCRSP_{am(t;s)} \tag{3}$$

where:

- $IVCRSP_{T(t;s)}$  = Total Intangible Value Created by the Relevant Social Performance ( $IVCRSP_{T(t;s)}$ ), quantified in the year (t) (year when the evaluation of social performances is realized) and related to the accounting year (s);
- $IVCRSP_{cm(t;s)}$  = Intangible Value Created by the Relevant Social Performance for Current Management ( $IVCRSP_{cm(t;s)}$ ), quantified in the year (t) and related to the accounting year (s) (year when the Social Costs are paid and the Social Benefits are obtained);

- $IVCRSP_{am(t;s)}$  = Intangible Value Created by the Relevant Social Performance for Asset Management ( $VCRSP_{am(t;s)}$ ), quantified in the year (t) and related to the accounting year (s) (year when the Social Assets are paid and the Social Capital Benefits are obtained).

2) The methodological path for evaluating the environmental performance.

Even in this case the values of the environmental actions are to be isolated from those made voluntarily (so the model includes only voluntary actions, that are not required by law), in adherence to the above definition of social responsibility realised by the European Commission (E.C., 2000): for individualizing the areas of analysis it is possible to follow national standards [e.g. an Italian standard is the framework realised by ISPRA (ISPRA, 2009)] or international standards [e.g. an international standard is the COFOG (Classification of the Functions of Government) classification realised by United Nations (Eurostat, 2007)].

After we having individualized the environmental values on which we can apply the model, the formula of quantification in the year (t) of the reward to acknowledge, in these case, for an environmental relevant behaviour, defined as Intangible Value Created by the Relevant Environmental Performance for Current Management ( $IVCREP_{cm(t;s)}$ ) – placed under the assets of Immaterial Immobilizations with counterpart a net equity revaluation – could be written as:

$$IVCREP_{cm(t;s)} = \sum_{i=1}^n (EC_{i(s)} * r_{(t-s)}) - \sum_{i=1}^n (EB_{i(s)} * r_{(t-s)}) \quad (4)$$

where:

- $IVCREP_{cm(t;s)}$  = Intangible Value Created by the Relevant Environmental Performance for Current Management ( $IVCREP_{cm(t;s)}$ ), quantified in the year (t) (year when the evaluation of environmental performances is realized) and related to the accounting year (s) (year when the Environmental Costs are paid and the Environmental Benefits are obtained);
- $\sum EC_{i(s)}$  = Sum of Environmental Costs (i) concerning the year (s);
- $\sum EB_{i(s)}$  = Sum of Environmental Benefits (i) concerning the year (s);
- $r_{(t-s)}$  = monetary revaluation rate (r) concerning the period between the accounting year (s) (year when the Environmental Costs are paid and the Environmental Benefits are obtained) and the year (t) (year when the evaluation of environmental performances is realized).

Also in this case the monetary revaluation rate (r) used in the model, should be defined directly by the related set of rules, or indirectly referring to specific Prices Indexes for monetary revaluation produced by official national or international institutions. The same reflection concerns eventual patrimonial elements to isolate in order to quantify environmental policies actually virtuous: these accounts should be purified from possible subsidies collected in capital accounts for this purpose.

In this last case the formula of the quantification in the year (t) of the reward acknowledged for a environmental relevant company behaviour, definable as Intangible Value Created by the Relevant Environmental Performance for Asset Management ( $IVCREP_{am(t;s)}$ ) – placed under the assets of Immaterial Immobilizations with counterpart a net equity revaluation – could be written as:

$$IVCREP_{am(t;s)} = \sum_{i=1}^n (EA_{i(s)} * r_{(t-s)}) - \sum_{i=1}^n (ECB_{i(s)} * r_{(t-s)}) \quad (5)$$

where:

- $IVCREP_{am(t;s)}$  = Intangible Value Created by the Relevant Environmental Performance for Asset Management ( $IVCREP_{am(t;s)}$ ), quantified in the year (t) (year when the evaluation of environmental performances is realized) and related to the accounting year (s) (year when the Environmental Assets are paid and the Environmental Capital Benefits are obtained);
- $\sum EA_{i(s)}$  = Sum of Environmental Assets (i) concerning the year (s);
- $\sum ECB_{i(s)}$  = Sum of Environmental Capital Benefits (i) concerning the year (s);
- $r_{(t-s)}$  = monetary revaluation rate (r) concerning the period between the accounting year (s) (year when the Environmental Assets are paid and the Environmental Capital Benefits are obtained) and the year (t) (year when the evaluation of environmental performances is realized).

The quantification of the Total Intangible Value Created by the Relevant Environmental Performance ( $IVCREP_{T(t;s)}$ ) in the year (t), is determined by the following formula:

$$IVCREP_{T(t;s)} = IVCREP_{cm(t;s)} + IVCREP_{am(t;s)} \tag{6}$$

where:

- $IVCREP_{T(t;s)}$  = Total Intangible Value Created by the Relevant Environmental Performance ( $IVCREP_{T(t;s)}$ ), quantified in the year (t), year when the evaluation of environmental performances is realized;
- $IVCREP_{cm(t;s)}$  = Intangible Value Created by the Relevant Environmental Performance for Current Management ( $IVCREP_{cm(t;s)}$ ), quantified in the year (t);
- $IVCREP_{am(t;s)}$  = Intangible Value Created by the Relevant Environmental Performance for Asset Management ( $IVCREP_{am(t;s)}$ ), quantified in the year (t).

In conclusion the new immaterial asset can be defined as Global Intangible Value Created by the Relevant Social and Environmental Performance ( $IVCRSEP_{G(t;s)}$ ) and can be determined by the following formula:

$$IVCRSEP_{G(t;s)} = IVCRSP_{T(t;s)} + IVCREP_{T(t;s)} \tag{7}$$

where:

- $IVCRSEP_{G(t;s)}$  = Global Intangible Value Created by the Relevant Social and Environmental Performance ( $IVCRSEP_{G(t;s)}$ ): the value is determined in year (t) and refers to the activities supported in year (s);
- $IVCRSP_{T(t;s)}$  = Total Intangible Value Created by the Relevant Social Performance ( $IVCRSP_{T(t;s)}$ ), quantified in the year (t);
- $IVCREP_{T(t;s)}$  = Total Intangible Value Created by the Relevant Environmental Performance ( $IVCREP_{T(t;s)}$ ), quantified in the year (t).

The last formula concerns the Global Intangible Value Created by the Relevant Social and Environmental Performance ( $IVCRSEP_{G(t;s)}$ ) determined in year (t) and refers to the activities supported in year (s). At this point it is possible to extend the formula for social and environmental activities supported in a defined year cycle (w) (e.g. a three years cycle or a five years cycle, etc.), with  $w = 1 \dots (s) \dots m$ . In this case the Global Intangible Value Created by the Relevant Social and Environmental Performance ( $IVCRSEP_{G(t;w)}$ ) – determined in year (t) and referred in a defined year cycle (w) – can be determined by the following equation:

$$IVCRSEP_{G(t;w)} = \sum_{s=1}^m IVCRSP_{T(t;s)} + \sum_{s=1}^m IVCREP_{T(t;s)} \tag{8}$$

where:

- $IVCRSEP_{G(t;w)}$  = Global Intangible Value Created by the Relevant Social and Environmental Performance ( $IVCRSEP_{G(t;w)}$ ) determined in the year (t) and referred to the activities supported in a defined year cycle (w), with  $w = 1 \dots (s) \dots m$ ;
- $\sum IVCRSP_{T(t;s)}$  = Sum of Intangible Values Created by the Relevant Social Performance ( $IVCRSP_{T(t;s)}$ ), quantified in the year (t) and referred to the social activities supported in a defined year cycle (w);
- $\sum IVCREP_{T(t;s)}$  = Sum of Intangible Values Created by the Relevant Environmental Performance ( $IVCREP_{T(t;s)}$ ), quantified in the year (t) and referred to the environmental activities supported in a defined year cycle (w).

## 5. Conclusions

The present contribution has proposed a theoretical model oriented towards the overcoming of the current neutrality, previously defined, in the connection-conditioning (reciprocal or bidirectional) between the results of the traditional accounting and those derivable from social and environmental accounting of the company, in which is possible to assume an ideal bidirectional connection between the different accounting models. Therefore is evident that the aspects analyzed and the consequent solutions, need a natural consolidation obtainable through the realization of a comparative benchmarking between the actors of the system (scientific community, public companies, interested professional orders, guarantee institutions of the process, etc.), oriented towards the determination of a scientific method to evaluate a model that is commonly shared by all the subject interested in the process.

Adhering to the evaluation process, taking up what we said before, should be guaranteed for defined year cycles (for example three years cycles or five years cycles), and the possible choice of leaving at the end of the cycle should be confirmed for a period at least of the same duration of the one expected for the adhesion, in order to avoid an adhesion in alternation and for the convenience of the evaluation process. That being stated, it can meet the possibility, inside a single evaluation cycle, to proceed in reducing the value of the new intangibility asset (and the related net equity value): this is the case, for example, of a divestment of goods considered in previous managements relevant from the social and environmental point of view: in this case the consequent reduction would be just like the related revaluation previously done.

Consequently the counterpart created as a net equity revaluation has the function to compensate possible future company losses. It should be used for this aim just for the part that corresponds to the revaluation done on charges and of the proves of current management considered in previous managements relevant from the social and environmental point of view: all this in order to avoid the creation of potential negative values of this net equity fund showed previously (that, for example, of a subsequent divestment of goods considered in previous managements relevant from the social and environmental point of view).

Moreover the Global Intangible Value Created by the Relevant Social and Environmental Performance ( $IVCRSEP_{G(t;w)}$ ) is not subject to problems of amortization because the conditions are lacking (like, for example, the use of the economic good, the useful duration defined of new tangibility, etc.), whereas in adherence to the following International Accounting Standards: a) for the Private Sector the main IAS/IFRS documents are: IAS 36 Impairment of Assets (it deals with impairment testing for all tangible and intangible assets, except for assets that are covered by other IFRS) (IASB, 2010); IAS 38 Intangible Assets (IASB) (IASB, 2009); for the Public Sector the main IPSAS documents are: IPSAS 21 Impairment of Non-Cash-Generating Assets (IPSASB, 2004); IPSAS 31 Intangible Assets (IPSASB, 2010).

In conclusion it is meaningful to obtain that if the debate about how to individualize a model of accounting that combines more the economical and company evaluations with social and environmental ones, is quick, it is also – nowadays – a far off target: the final wish is that this contribution can, in some ways, stimulate the common interest towards the definition of an

accounting system in which the traditional analysis aspects are more integrated with the complementary ones (social and environmental values).

Further arguments and widening, combined with an experimentation on the field, will be able, therefore, to allow a useful consolidation of this proposal and favour at the same time a working progress process of a new vision of the concept of sustainable development referred to the accounting disciplines.

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