

# An Imaginary Vision of the Economic Entities-Environmental Harmony with the Knowledge Accounting, Financial and Costing Fields and its Reflections on the Fulfillment of Sustainable Development

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In recent decades, the trend towards the environmental dimension and inclusion of it within the general framework of the financial accounting and costing system has increased. This has been the natural result of the stress in functional and academic institutes on the entities concerning the environment and an awareness of the necessity of protecting it. This research aims to clarify the importance of accounting, with its financial and costing dimensions, for achieving development sustainability and to show how beneficial it can be when making decisions. In order to do this, sustainable development will be treated depending on the identification, measurement and disclosure in its environmental field concerning the total accounting and financial knowledge and the detailed costing after monetarily rendering the effects. The research shows how important participation in sustainability is in developing a dependent accounting system by revealing that the external variables/costs that accompany environmental changes within the entities accounts is immature. Sustainable development accounting is regarded as a concept that paves the way for explanations regarding the benefit of financial accounting and cost accounting in entities. Since the united accounting system is not concerned with sustainable development, the conclusions and recommendations will add to the idea that the inclusion of sustainable development accounts, with its

associated financial and costing dimensions, will fulfill future welfare in parallel with the changes in wealth with the passage of time.

**Key words:** *Accounting, Financial, Costing, Sustainable.*

## **Introduction**

This research aims to feature the role of sustainable development accounting by showing the contribution of the accounting system in reinforcing it and finding a conceptual vision, with its financial and costing dimensions that environmental dimensions, in a way that is positively reflected in the development of the tourism sector in Iraq. Entities are aware of the fact that the environment is the source of their resources and ruining it not only ruins their benefits, but also ruins the whole society. Accordingly, the environment and its relation to accounting within the framework of sustainable accounting has been among the vital considerations of decision makers.

However, the difficulty lies in treating it due to the absence of a marketing price concerning it. Thus, measuring the environmental effects of entities and disclosing them may negatively affect continuity rates and may lead to ending and closing them due to such a relationship with the environment. Since accounting is regarded as one of the renewing acquaintances due to its relation to social, environmental and economic changes, new accounting problems have come into existence, concerning sustainable development accounting, which require solutions on the part of accountants. Accountants play a great part in improving the information quality that is required to be measured and disclosed on a sustainable environmental accounting basis.

Various sectors in Iraq, now, need to be in harmony with the environment to sustain continuity of growth, a matter that leads to entrepreneurship in sustainable development. This requires the government to prevent wasting resources accompanied by increasing the rates related to the consuming of natural resources.

As a result, the concept of sustainable development has been suggested for providing the internally connected factors of the sustainable development process, i.e. environment, economy and society. Attention has been given to containing sustainable development because of the entities satisfaction regarding increasing their marketing shares.

## **Literature Review**

Urban's (2005) study titled 'Environmental Accounting' presented one viewpoint concerning the developments in environmental accounting and reviews whether or not the utilities of the environmental accounting of entities can be made use of in society. Adams et al. (2002)



conducted another study which was titled 'Accounting and Financial Enclosure of the Costs and Environmental Opponents, the UN Conference of Trade and Development'.

Muller, Mendelsohn and Nordhaus' (2011) study aimed to identify the effect of applying environmental accounting to industry projects. Owen and Lehman (2000) concluded that building a relationship between traditional accounting and modern samples suits the business reality. Nour's (2000) study aims to identify the effect of the relationship between environmental accounting and environmental disclosure via standards.

### ***Environment as a Concept***

Environment is defined as the place where humans live including the phenomena that affect and is affected (Al-Sayed,2003:48). It is the environment that includes all creatures and resources surrounded by elements in the atmosphere, mainly air, water and soil (Dien and Izz al-Din,2000). In the field of accounting, the environment comprises the field of producing information for making environmental decisions (Reyes,2002:2). Environmental accounting is defined as the optional disclosure of the descriptive and quantitative information of environmental activity which the entity performs to influence the decisions of information users (Mathews,1993:64).

### ***Environmental Pollution as a Concept***

As a concept, environmental pollution stems from the outputs of production and consumption activities that are turned into harmful elements by humans. Humans are the reason for the occurrence of risks to animate materials and ideological systems (Kader and Baqader,1994). Pollution is defined as causing a change in the environment of living creatures and natural resources as a result of production and consumption, a matter that leads to the emergence of some outputs which are unsuitable for the environments where people live. Pollution is governed by the activities that cause it or by a third party.

### ***Dimensions and Principles of Sustainable Development***

Sustainable development is based on various dimensions such as an environmental one that adopts strategies that should be available in the manufacturing field for the purpose of the ultimate utilisation of the nature capital instead of using them in a way that negatively affects the environmental balance. This is obtained through controlling the use of these resources, manipulating techniques for environmental control and leading the country to an era of clean industries (Gundimeda, 2004). It seems important therefore to shed light on the projects that help with economic development while protecting nature in order to improve the life quality for all parties. This entails studying the changeable effects between the projects of

development and environment programs so as to help prevent negative effects and celebrate positive ones (Mohammed, Flayyih, Mohammed, & Abbood, 2019).

### ***Disclosing the Sustainable Development***

Entities focus on disclosing sustainable development either through a separate report added to their traditional financial reports concerning the environment, or through a unified report, concerning sustainable development, representing an indicator of the entities' performance. Daugins' indicators and sustainability group have developed indicators for testing the entities according to their commitment concerning the principles related to sustainable development, as explained in Table 1 below:

**Table 1:** Principles of SAM, Daugins and Sustainability

	Principles of SAM, Daugins and Sustainability
Technology	Products depend on innovative technology that efficiently and effectively use resources over time
Institutional Control	Standards of administration responsibility/organisational capability/entities-culture and the relationship with contributors
Contributors	They care for financial returns/economic growth/ productivity- / increasing the national competition and contributions in ideological capital
Industry	Entities direct their industries towards sustainability through exhibiting their activities and disclosing their performance
Society	Entities encourage social welfare via suitable responses to rapid social change/population change/ the change of cultural samples and the need for the permanent learning

As far as the trends towards disclosing sustainable development are concerned, they can be grouped in two directions according to Bennet and James' study. The first one involves facing environmental challenges through expanding a concentration on the internal variables and focusing on external variables as well. The second one involves measuring and assessing environmental performance, for which the balanced cards method is often utilised, as shown in Table 2 (Kaplan and Norton, 1996:556).

**Table 2:** Balanced Cards Method

<b>Balanced Cards Method</b>	
Financial Perspective How faithful the contributors are The economic and managerial added value The Net Income and Return of Investment Profit limit Marketing Portion New Customers/new markets	Innovation perspective A percentage ratio of returns that resulted from products which have been developed The number of innovations and investment in research and development The employees' satisfaction and trust concerning the administration Rewards, incentives and performance management Training skills Quality
Operations perspective A number of the orders in a time period Response time and timing scales The trust in information technology systems The waste, lack and treatment acceleration	Customers' perspective How faithful they are Privilege Value Products Quality Services Quality Relationships with customers

Concerning the knowledge units, the focus here is on abstract assets whose indicators are shown in Table 3 (Sveiby,1997:117).

**Table 3:** Abstract Assets Indicators

Abstract Assets Indicators			
	External structure indicators	Internal structure indicators	Knowledge indicators
Growth and renovation indicators	Ability to make profit for each work Organic growth Reinforcing the customers' view	Investment to reinforce the customers' quality	Number of years in job Training and learning levels Reinforcing the customers' information
Stability Indicators	The ratio of real customers Age structure The customers' ratio and the succession of orders-repetition	Age of the unit Employees' committee substantiation The ratio of beginners and minority	Number of jobs-works Relative wages Minority
Efficiency Indicators	Customers' satisfaction-indicator The sales concerning the part of the employee Profit/loss indicator	The rate of employees' committee – substantiation Values and situations indicator	Number of jobs and the speed on their recycling Effect of financial levers The added value for the employee and career Profit for the employee and career prospects

### ***Confessing and Accounting Measurement***

Most accounting records do not contain the information related to the environment which might be of relative importance for the protection of it. This occurs because of the concealing process of information built into the traditional systems due to their being invalid within the bank accounts. There are examples of information being unintentionally concealed in accounting records. The manager who would like to benefit from this information can hardly find it. The traditional way of concealing information regarding the environment is done by regarding it as public expenses instead of linking it with processes, since the classification of public expenses contains important information concerning environmental amounts which the manager can use in decision-making. For example, the cost of getting rid of ruins may be very high for a certain product line and very low for another that does not use dangerous materials. So, relating the amount of discarding these remnants to the size of production will be unwise or unsuitable and subsequently, the pricing of the product dependent on this information will be unwise too.

### ***The Accounting Remedy of Sustainable Environmental Accounting***

The expenses related to a sustainable environment can be classified into:

A) Capitalistic sustainable environmental expenses represent the amount of the tools and equipment shown in the financial -list relating to environment protection. They are considered to be registered assets depending on the historical cost which then vanishes according to suitable rates. They are bought to be used in managing the various aspects of environmental pollution as a reduction or curing of harmful environmental results.

B) Current expenses relating to a sustainable environment represent the drained amounts of running the systems of environmental protection. In the income list, expenses related to sustaining the environment can be compared with the revenues of it to obtain the revenue or the sustainable environmental deficit in order to make decisions for increasing the returns or reducing the deficit.

As far as benefits are concerned, they are of two types of benefits related to commitments. The first one is devoted to noticeable environmental commitments. This type of benefit is used to cover sustainable environmental commitments including the expenses of pollution reduction. Considering the principle of fulfilling the environmental effect, the amounts that the entities spend in relation to environmental damages are regarded as a payment for a sustainable environmental commitment that should be confirmed when pollution is present. The second type is devoted to unseen environmental commitments. In this case a spare account is used to face any commitments that may arise in an entity due to it being the reason for environmental damages. For instance, the expenses of causes that are raised against it because of the workers' injuries from harmful rays.

There are different ways of disclosing sustainable environmental expenses, such as the descriptive disclosure of the entities' activities concerning the environment and the disclosure of controlling activities of pollution with financial and quantitative data. With respect to the expanding of environmental disclosures in financial lists, this can take place either from the viewpoint of disclosing new information (such as the data of human resources accounting and those of social accounting) or through disclosing the financial expectations and registered risks.

Disclosure requires exposing the information and arranging it in a way in which it can be properly understood and used in making decisions. There are two other types of disclosure that can be utilised which are preservative disclosure and an educational one. The first one aims at disclosing the information in order to protect the investor who has a limited capability for utilising information. This type of disclosure requires revealing the accounting policies and the changes found in them, correcting errors and financial lists, changes to the nature of entity

accounting, losses and gains expected, probable correlations, and coming events. The educational disclosure, on the other hand, which has appeared as a contemporary trend due to the increasing importance of disclosure of suitable environmental information to make decisions, should be enough as far as the information is concerned and should take into account all parties and the relative importance for each item. This work may lead to following the good reputation of sustainable environmental accounting of the entity and increasing the future competitive value thus reducing any forfeits and sanctions imposed.

Concerning the kinds of legal sustainable environmental responsibilities, these can be the non-observance of environmental legislations, purgation of the working place, legal costs, costs of closing the entity or legal enquiry due to damages such as place-reclamation, and the cost of compensation and fines. It must be noted that laws and legislation affect the requirements of environmental performance either through direct obligatory legislation and laws or through international markets. Accordingly, the adoption of ethical commitments towards the environment will reinforce the entities existence and continuity and provide their competitive value in the contemporary working environment.

### ***Accounting of Sustainable Environmental Costs***

Research interest in the problems of environment and finding suitable solutions is increasing. Globally, society faces the problem of pollution, and what increases risks is the rising costs of the prevention of environmental pollution (Evers,2003) and ((tanciu et al.,2011). There is increased government involvement by way of tax policies and the establishment of laws concerning environmental pollution which have raised the interest of those who are concerned with the environment and prefer these policies rather than replacements (Hutchison,2000:40).

Due to the increase in the size of environmental commitments, it is necessary to know the nature of sustainable environmental costs in order to facilitate the measurement and classification of them. This depends on the source of their occurrence via various organisations, a matter that facilitates the preparation of the costs of sustainable environmental reports. Hansen has defined them as the sacrifices an entity endures for the sake of being harmonic with the standards of the regulatory bodies and the costs that are expended to reduce harmful materials (Christoper,1997:18).

### **Methodology**

The importance of this research stems from the rarity of research concerning sustainable development accounting of the environmental dimension in the Iraqi environment. The study aims to show the role the accounting system may play in the field of environmental protection

and in support of sustainable development. This involves extending the working fields of accounting to include disclosure and environmental financial and costing measures.

Depending on the elements of the research problem, the research hypothesis can be stated as follows: Studying the reality of sustainable environmental accounting in Iraqi entities and its constituents fulfills the advantages obtained in the environmental financial field once business administrations show awareness of its importance in assessing environmental performance.

Due to the existence of a defect in the accounting formulae that links the sustainable development dimensions to each other, the research aims to pursue the following inquiries:

1. Is there an invalid idea of sustainable development accounting, regarding its elements and financial branches?
2. Does sustainable development accounting (in all its manifestations) lead to improvement of the financial data-level of relevant entities?
3. Is the information presented by financial accounting departments in their statements enough for the purposes of founding accounting related to sustainability of the environment?
4. Is there sufficient information concerning the costs of sustainable development for decision-making?

## **Results**

Disclosure of sustainable environmental costs can be tackled in the following points:

The importance of disclosing sustainable environmental information is due to the development of the general disclosing standard through the expansion of data and information that is disclosed, in form and content, to include economic and environmental performance. Providing financial users with information concerning environment helps them assess the constancy of an entity in its responsibilities towards saving the environment from pollution. It also increases societal trust in entities that fulfill their responsibilities concerning sustainability and encourages its development. Entities that don't fulfil their responsibilities must be encouraged to do so. Dimensions in the field of disclosing the environmental dimension have appeared concerning the disclosure of information relating to sustainable environmental performance that has the following forms:

1. Disclosing environmental costs only without those concerning the environmental values and advantages. This is due to the difficulties that exist with respect to the measurement of these advantages. Disclosure can be carried out within traditional financial lists or in independent reports.

2. Disclosure of all environmental costs and advantages whether in independent reports or within traditional financial statements.

***Concerning the Forms of Disclosure, there are:***

1. Reports concerning environmental performance which take a descriptive or compositional form, or a quantitative one that includes numbers, statistics and ratios within an environmental report.
2. Quantitative reports that contain quantitative information about environmental performance, such as the quantity of emissions.
3. Financial reports about environmental performance that helps to identify the cost and return of the environmental activity.
4. Concerning the position of disclosing performance, this is placed within environmental reports independent of the traditional lists and their appendices.

This is based on designing sustainable environmental reports which are separate from the financial ones as a means of showing how faithful the entity is in its responsibility to the environment. As such, there are three types of reports, which are:

***Descriptive Reports about Sustainable Environmental Performance***

These reports contain a description of the environmental activities that the entity fulfills as an example of its constancy of environmental responsibility. The report form is that of a budget including the assets for describing the positive effects of environmental activities. This type is regarded as a primitive ‘primary’ entrance of reports since it includes a description for one of the fields and activities and does not include any quantitative measurements. Most elements which it contains have no monetary value, as shown below (Labuschagne, Brent and Claasen,2005):

**Table 4:** Most elements which it contains have no monetary value

Material	Measurement unit	Standard levels	Actual levels	Deviations
Light intensity	Candle/foot			
Noise	Db			
Soil	MG/m3			
Smoke	MG/m3			
NO2	MG/m3			

### ***List of Sustainable Environmental Costs***

This includes the costs of the sustainable environmental activities that the entity fulfills as a form of its constancy of environmental responsibility. This list is separated from the financial lists that are periodically prepared. In its relations, the entity is related to individuals, environment and product. It is prepared by a group, within the entity, with various specialisations and is headed by an accountant. The list is then checked by an independent external group. Regardless of this, there are some notes on it, such as:

1. It is regarded as one of the optional statistical lists that are outside the accounting system. It is required as a kind of disclosure about the entity's role in protection of the environment.
2. There is a lack of objectivity when identifying damages since they are regarded as a cost which the entity tries to avoid in order not to fulfill compliance that has the same shortcomings that result from applying the concept of damage prevention expenses. Both concepts do not express an environmental cost that results from an entity practicing the activity from a social viewpoint.
3. The model is limited to social and environmental costs only, so the social and environmental performance of an entity cannot be thoroughly judged since it does not clarify the effect of entity efficiency on its environmental expenditures in the social performance. Thus, it considers the entity that expends great amounts as an entity of great performance concerning its environmental responsibilities regardless of the achievements it has fulfilled in its social and environmental performance (Sajady, Dastgir and Nejad,2012). Disclosing sustainable environmental expenses without any effect on the obtained advantages on activities can be clarified as follows:

**Table 5:** Disclosure of sustainable environmental expenses without any effect on the obtained advantages on activities

Sustainable environmental activities				
Sustainable environmental criteria				Amount at ID.
1	Costs of rehabilitating the damaged agricultural lands	xx		
2	Cost of adding control instruments over pollution	xx		
3	Cost of excluding the poisonous materials of the production processes	xx		
4	Cost of other criteria	xx		
5	Sum of criteria		xxx	
Subtracting the environmental damages				

### ***Total Sum of Environmental Costs***

The inclusion of sustainable environmental expenses as a part of the product life cycle can show that the product has low possession costs, but high environmental ones. In this case, it will be less attractive than another product with high possession costs and low environmental costs (Dunk,2004). Analysing the product life cycle helps in identifying the causes of pollution which are divided into various phases (Ferreira, Silva and Azevedo,2016).

#### ***First Phase: Designing Phase***

Sustainable environmental costs occur and are observed during every stage of the product life cycle and are implicitly stated in the detailed designing stages of the product. Pollution will be designed outside the product and must be controlled during every stage of the life cycle. Taking this stage into consideration and designing the unpolluted product accordingly can reduce environmental deterioration. The decisions made should be strict since any additional amount that is expended on the product will be accompanied by multitudes in the environmental costs for the production stage or after it.

The elements of sustainable environmental costs are represented as follows:

1. Costs of research and development activities necessary for identifying the environmental requirements of the product quality.
2. Costs of product design activities, selecting or designing the components required as essential parts in the product.
3. Costs of analysing risks related to the safe use of the product or service.
4. Costs of analysing the product capability of reuse or rotation.

#### **Second Phase: Possession of Raw Materials and Energy**

Obtaining the clean sources of energy provides a good opportunity for reducing the costs of treating and refining the environment of pollution. Here the elements of sustainable environmental costs are represented as follows:

1. Checking the suppliers to review and assess the capability of each one of them for fulfilling the environmental requirements of the organisation.
2. Conforming purchased materials to the requirements identified to reduce the effect of nonconformity of the components on the environment.
3. Planning for the check and test processes of supplies in order to identify the degree of acceptance.
- 4 Ensuring the ability of the procedures related to products as being homogenous with the environment.

5. Training programs are established for preventing operational errors and how to deal with poisonous materials.

### **Third Phase: Manufacturing Phase**

The manufacturing processes involve solid, liquid and gaseous remnants. Most of these toxins are disposed of in the environment. In order not to manufacture products that damage the environment, this must include:

1. Materials that pollute the environment must not be used in production and there must be a restriction of emissions that harm the environment.
2. Never disposing of the remnants of the manufacturing processes and neglecting the damages to environment.
3. Work on rotating, reusing or repurposing of remnants that have resulted from the manufacturing processes.

### ***Fourth Phase: Product-Packing Phase***

It must be mentioned here that it is important to concentrate on offering products in healthy cans. This requires manufacturing cans without using poisonous materials and in a way that makes it impossible to use the can again. In other words, the cans should be strictly single use.

### ***Fifth Phase: Product Use***

The use of the product may lead to poisonous remnants that pollute water, air or soil. These remnants can be reduced by emphasising the efficiency of the materials purchased, namely, that they should not contain harmful materials.

### ***Sixth Phase: Disposal of the Product***

The costs of disposal of products that affect the environment are high. Therefore, the remnants of the manufacturing processes should be made use of, mainly by reusing or repurposing them into another product that reduces the total cost. Emphasis should also be made on sustainable environmental costs in the product life cycle in order to prevent the occurrence of pollution. As a result, the extra costs of not responding to environmental needs will be avoided, otherwise the entity will find itself obliged to endure these costs which exceed those of environmental protection.

The most important obstacles that impede the application of sustainable environmental accounting, according to Hochman (1998), are:

1. Unavailability of accounting standards or laws that oblige entities to admit to their environmental responsibilities.
2. The problem of turning qualitative data into quantitative data measured by monetary units.
3. The problem of unseen harmful environmental effects that cannot be predicted or predicting the amount of damages that result from them.
4. The problem of limiting environmental damage, let alone the difficulty of measuring damages in monetary units.
5. The problem of adding the environmental cost to the product cost that is related to the present competitive cost. This may lead to increasing the costs of products at later stages, a matter that weakens competitive capabilities at the international level.
6. The problem of objectivity concerning the information related to environmental pollution which is always subjectively governed.

## **Conclusions**

After presentation, analysis and evaluation, a number of conclusions have been reached. Chief among them are the weakness in making use of sustainable environmental accounting information to increase the efficiency of resources. Also, there is the lack of accurate identification regarding appropriate disclosure and articulation of sustainable environmental accounting. The failure of society to recognise the importance of sustainable environmental accounting is another factor. This encourages governments and responsible people to oblige business organisations to reliably confess and disclose sustainable environmental accounting and endure its costs. Another conclusion is the low awareness of entities concerning the importance of accounting treatment of environmental costs. Disclosure cannot be made due to inaccurate measurements.

There is still a defect in establishing the accounting terms that link the sustainable development dimensions at the same time. Finally, the lack of understanding of sustainable environmental development connections and its dimensions will create challenges when measuring sustainable development and categorising it within accounting terms.

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