International Journal of Education, Modern Management, Applied Science & Social Science (IJEMMASSS)
ISSN : 2581-9925, Impact Factor: 6.882, Volume 05, No. 01(III), January - March, 2023, pp. 113-120

A STUDY ON AWARENESS OF CARBON CREDIT ACCOUNTING AND REPORTING AMONG THE PROFESSIONALS IN MADHYA PRADESH

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ABSTRACT

In the present scenario carbon dioxide and greenhouse gas emissions are the foremost environmental problems in India as well as in the world. The increase in pollutants in the atmosphere is due to anthropogenic activities, which put the residents and particularly children in serious health issues. The data which have been gathered till now had revealed that "carbon" and "greenhouse gas emissions" had reached undesirable levels and now affecting the country's GDP. To solve this major problem, in Kyoto Protocol and Paris Agreement took place. The outcomes of the Protocol were Joint Implementation, Clean Development Mechanism, and International Emission Trading. This helped in reducing emissions in the atmosphere and earning carbon credit through CDM projects. Further to make a Sustainable Economy, a COP-26 meeting in Glasgow under which many countries have committed to make themselves a "NET-ZERO" or "Carbon – Neural" Economy by a specific time-bound. India has also declared to make it Net -Zero economies 2070. This paper is an attempt to identify the role of carbon credit to make a sustainable economy and to analyse the accounting treatment and reporting by the companies. To know about the accounting treatment Secondary data was collected from the annual report of the company. Also, to know about the perceptions of professionals' Primary data was collected from 70 academicians and 50 professionals through a mailed questionnaire. The result of the study shows that the awareness level is low among academicians compared to professionals. Based on gender, females are less awarded than males. The study also shows that no uniform accounting system is there for accounting and reporting. European companies are still having methods of calculating credits and proper standards but India is still lagging despite having the world's biggest carbon market. India has a golden opportunity to generate secondary income from carbon credits and reduce emissions as India's Carbon Market is the fastest-growing Carbon Market in the World.

Keywords: *Sustainable Economy, Net-Zero, Carbon Accounting, Emission Trading, Carbon Neutral, Clean Development Mechanism, Carbon Market, Carbon Credit.*

Introduction

Nowadays, the prime problem faced by the world is a calamitous change in climatic conditions. This problem has arisen due to anthropological acts that emit greenhouse gases into the atmosphere. It affects climatic conditions and events such as drought, flooding, high winds, extreme temperatures, etc. take place. Burning of fossil fuels and deforestation have shown contrary effects by increasing global surface temperature. Our main objective is to control and manage the "CARBON EMISSIONS" which have been in their growing phases. "CARBON OFFSETTING" & "CARBON SEQUESTRATION" are methods that can be used on a large scale to reduce carbon emissions. India is the 4th highest emitter of carbon dioxide in the world. The coal industry is the highest emitter of carbon emissions in the world. China is the leading country in the world releasing carbon emissions but China is focusing on this and

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trying to reduce its carbon emission and declaring itself to be a carbon-neutral economy by 2060. Countries that are in the agreement with “The Kyoto Protocol” also indulged in many ways to reduce carbon emissions in the environment. India is also improving its stake in this regard by having a serious discussion and implementing some valuable measures in this direction.

According to the Kyoto Protocol, only ANNEX-1 countries can come under this protocol to reduce global warming up to 2ºC. The developing and least developed countries do not come under this protocol which means these countries are not bound by the amount of Green House gas emissions that they normally release in the atmosphere but they too generate greenhouse gases.

Those countries under binding emission reduction targets are can purchase carbon credits from developing countries. Developing countries save the credits by emitting less in the atmosphere and get certified issued allowances which are known as CARBON CREDITS equal to the number of emissions to meet the assigned reduction targets. Each allowance represents an allowance equal to emit of one metric tonne of CO2. To meet the targets, the binding countries, in turn, sets limits on the GHG emission by their local entities and businesses. Kyoto Protocol has given three market-based mechanisms to enable developed countries to meet their emission reduction targets.

- **Joint Implementation (JI):** It falls under article no. (6) of Kyoto Protocol, which is quite similar to CDM projects that permit commercial countries, to invest in eco-friendly technologies that will help them reduce their emissions that are committed under Kyoto Protocol and also achieve their set target.
- **Clean Development Mechanism (CDM):** It is briefly elaborated in Article (12) of the Kyoto Protocol, which tells about the concept of sustainable development by investing in greener projects by developing nations that help in decreasing greenhouse gases. The developing countries can transfer the surplus amount to the developed nations that have failed to meet the targeted emissions. The units saved are known as CER Certified emission reduction)
- **International Emission Trading:** Emission trading is elucidated in article (17) of the Kyoto Protocol. Which is considered to be an open market system where countries can buy and sell carbon credits. This system is also known as Cap and trade mechanisms where counties or industries which save the credits can sell it to other developed nations which exceed their limit of emissions of greenhouse gases at an auctioned price.

Carbon accounting is a procedure of measuring direct and indirect emissions of Green House Gases from the units. Here, “measure” means amounts of Greenhouse Gas emitted by an entity. The procedure helps in identifying the Gases emitted and some preventive actions could be taken to reduce the emissions. **Carbon Credit** is a certificate or a permit that gives an entity or a state the to produce a certain amount of carbon emissions and if the limit of carbon emissions is not fully utilized then the remaining can be traded in the market. The trading of carbon credit has made industries reduce their carbon emissions and work as another source of income.

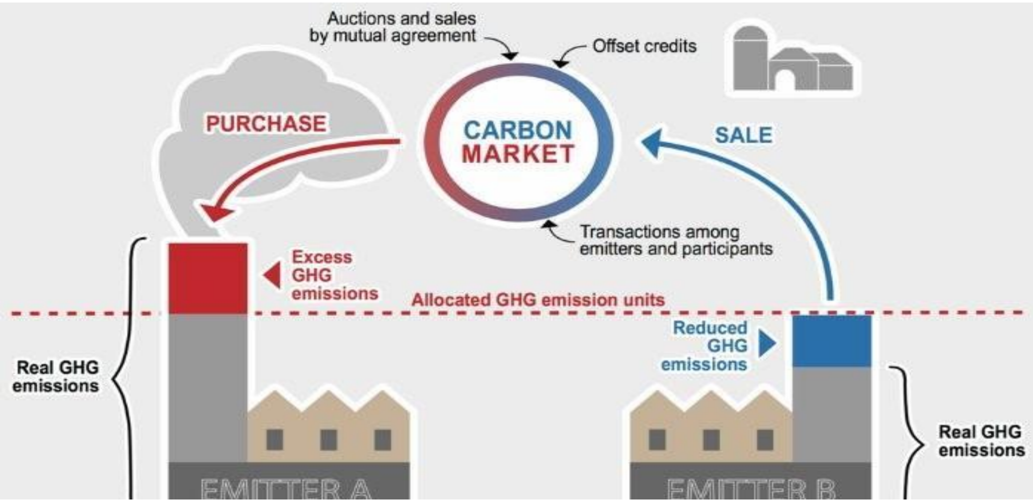
- **Study of Accounting Treatment and Reporting of Carbon Credits:** India introduced carbon credit accounting in July 2009 which means the firm has to reduce carbon emissions and put carbon credits for sale by UNFCCC. The rough sketch of India shows an outline and summaries that the carbon credits are intangible assets and are required to take care of as inventory. The discussion is still going on CARBON ACCOUNTING & ITS NORMS. As per our opinion after studying different scholars’ reviews the carbon credit should be shown on the asset side of a balance sheet as assets. Carbon credits should be considered as inventory of the firm, so AS-2 (valuation of inventory) should be applicable and AS-26 (intangible assets) should not be applicable. As per AS-2 the cost price or market price whichever is less should be taken. It will give an accurate and reliable price for trading. But AS-26 is based upon intangible assets and the value of assets cannot be easily assumed. As we all know that for a businessman the” inventory” is any goods in which the trading is been done. So, it is should be shown in the balance sheet, and income generated from the sales of carbon credit should be considered as the” revenue of the firm “and should be shown in the trading account of a firm as its “Income”.

Reasonable Approach to Enterprise Carbon Accounting

Enterprise carbon accounting (ECA) is an obligation for firms and will become obligatory due to government regulation. It is not allowed for a company to look within its borders, but it must look at its overall environmental duties to correctly measure carbon production and emission caused by its various activities. Data must be directly linked through overall calculations permitting action to be taken to help reduce greenhouse gas emissions. ECA is required to address the vital need for a more inclusive and measurable method of carbon accounting. There are 3 diverse scopes of emissions that need to be addressed. The 3 diverse scopes of emissions are basically at the e different levels direct indirect, and tertiary.

- **Scope 1:** Utility producers are responsible for the production of direct emissions or "scope one".
- **Scope 2:** Any organization that purchases power products (primarily electricity) to maintain
- its operations are responsible for producing emissions under "scope two".
- **Scope 3:** Any production which is related to or involves emission from vehicles such as trucks, motor vehicles, etc.

  To be successful, an ECA system should have the following characteristics:
  - Comprehensive
  - Periodic
  - Auditable
  - Flexible
  - Standards-based
  - Scalable
  - Efficient
- **Carbon Trading:** The diagram below shows the process of selling and purchasing Carbon Credit. Emitter-A is a developed nation (Annex-1 country) with a certain limit and the country has emitted CHG gases beyond their limit on the other Emitter-B (Annex-II) Developing nations the GHG emission is lower than the limit, then country B can get certified by the Government and receive a certificate and further company and company can auction it in the market at some price and Emitter-A can purchase it at an auctioned price from the market.



Source: https://sphera.com/glossary/what-is-carbon-accounting/

- **Role of Carbon Credit in Economic Sustainability:** An emission interchange system is a cap and trade-based mechanism. It has arisen as an influential program for handling greenhouse gas emissions. It offers a track for the expansion of new technologies and also boosts operational quality. This trading system is stubborn, command-and-control regulation and taxpayer-funded support programs because:
  - It is planned in keeping an opinion of environmental protection.
  - Cap and trade is the efficient mechanism for limiting GHG emissions.
  - It brings a clear price signal against which to measure investments. Trading is not only a program instrument that government should use but failure will give a prime role in trading that will impose unnecessary costs and generate policy confusion.

Objectives of the Study

- To know the significance of carbon credit.
- To find out the awareness level among professionals and academicians in Madhya Pradesh about carbon Credit Accounting and Its reporting.
- To analyse the perception of academicians and professionals towards carbon credits.
- To know the impact of carbon credit on Economic Sustainability.

Review of Literature

Bowen F. & Wittneben. B: The core concept was that a fully effective accounting system must be used for measurement and calculation which should be accurate, consistent, and reliable. This research paper yet gives the impression that accomplishing these goals is difficult because current carbon accounting efforts are spread across three distinct organizational fields and each prioritizes different goals.

Hashim. H, Ramlam.* M.R., & WANG. Y.C. [Research Institute for Sustainable Environment University Teknologi Malaysia*]: This study focuses on integrated carbon accounting and mitigation [INCAM] and is projected and proved using a case study that is focused on the " Plating Industry". The research showed that electricity consumption accounts for the utmost amount of carbon emission within the plating process. This paper suggested that if substantial emission reduction of the amount of 20% could be achieved by the implementation of higher-efficiency heating tools that require less energy and also produce a better heating performance for the process. This industry can ensure cleaner production.

Kamat.M & Kamat.M. "An examination of carbon disclosure practices in India": study analyze the current practices in carbon credit accounting & reporting by Indian NSE (National stock exchange) Nifty companies in their financial statements, to establish a baseline understanding of their current accounting practices to assess whether they are meaningful and transparent. Realizing the growing number of companies reporting in their financial statements is a clue to the carbon disclosure reporting practices followed by them. A huge number of entities in the NSE demonstrate their concern for the environment and show their voluntary readiness to address the ill effects of carbon emissions. This paper suggests that comparable information about the relative performance of firms in India cannot be recognized from carbon-related disclosure. There is diversity in, how firms are accounting for emissions allowances across India, and different approaches have resulted in materially different disclosures in the financial statements.

Bhanawat. S & Vardia. S The study took place in the selected companies from Gujrat and Rajasthan which include chemical, energy, sugar, power, cement, and mining industries. The data were analyzed based on annual reports and results revealed among sample Industries Gujrat Pharmaceuticals ranked at the top earning revenue from carbon credit that to 1% of the total revenue.

Research Methodology

This is a descriptive study based on both Primary and Secondary sources. Primary data has been collected from a mailed questionnaire based on convenience sampling among the professionals in M.P. The sample size was 165, but In total there were 124 respondents' 74 academicians and 50 professionals. To analyse the data tables and charts have been used. The percentage method based on least the and total score has been used. Secondary data was received from books, articles, journals, magazines, annual reports, and reports published by UNFCC, and CDP.

Scope of the Study

The scope of the study is very wider and has various dimensions to study but for this research the scope is in the territory of the Madhya Pradesh State of India, which primarily covers the academicians' teaching Commerce and Professionals which includes CA, CS, CWA, and CMA to fulfill the objective of study.

Importance of the Study

The research purpose is to upsurge awareness among the professionals and academicians in accounting as Carbon credit accounting helps in making the environment sustainable and could also help academicians' to earn revenue as a secondary source of income. It also helps in analysing the perception of professionals and academicians which helps in drawing a fruitful conclusion.

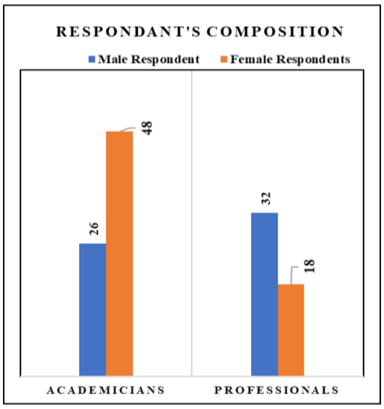
Data Analysis & Interpretation

For the study data was collected from the mailed questionnaire to the academicians and professionals in the State of M.P. The data below was computed based on responses received by respondents. Here Table -1 shows the demographic profile of the respondents. Table -2 depicts the perception of respondents based on the questionnaire. Table 3 is the computation based on the value received in Table -2 the Ideal score and least score are calculated.

Table 1: Shows the Composition of the Respondent's

Respondents' Composition			
Gender	**Academicians**	**Professionals**	**Total**
Male Respondent	26	32	58
Female Respondents	48	18	66
Total	74	50	124

Source- Primary research



The table-1, above shows the compositions of the respondents. It shows that in total there were 124 respondents out of which 26 were male academicians, 48 were female academicians, 32 were male professionals and 18 were female respondents answered the questionnaire.

Table 2: Shows an Analysis of Respondents' Perception

Attributes	Aggregate Score			
	Academicians		**Professionals**	
	Male	**Female**	**Male**	**Female**
Rate your knowledge about term Carbon credit accounting and reporting	72	58	90	32
Do you know the norms issued by the ICAI regarding Carbon credits?	14	18	78	33
Are you aware of CDP projects	108	78	120	56
Does the CDP project play a vital role in economic sustainability?	104	72	116	48
Do you know about CER's Carbon Emission Reduction?	17	11	69	26
Do you know about recording, and maintaining CER?	9	4	38	11
Do you know about methods of pricing Carbon Credits?	2	3	16	9
Have you heard about the companies that are earning through carbon credits?	21	19	87	42
Do you know that one metric tonne of CO2 reduction is required for 1 unit of CER?	7	9	42	21
Do you think carbon credit accounting will help you have a greener future?	72	84	116	64
Total score	426	356	772	342
Ideal score	1300	2400	1600	900
Least score	260	480	320	180
% of total score to ideal score	32.76%	14.83%	48.25%	38%
The total No of respondents	26	48	32	18

Source: Primary data

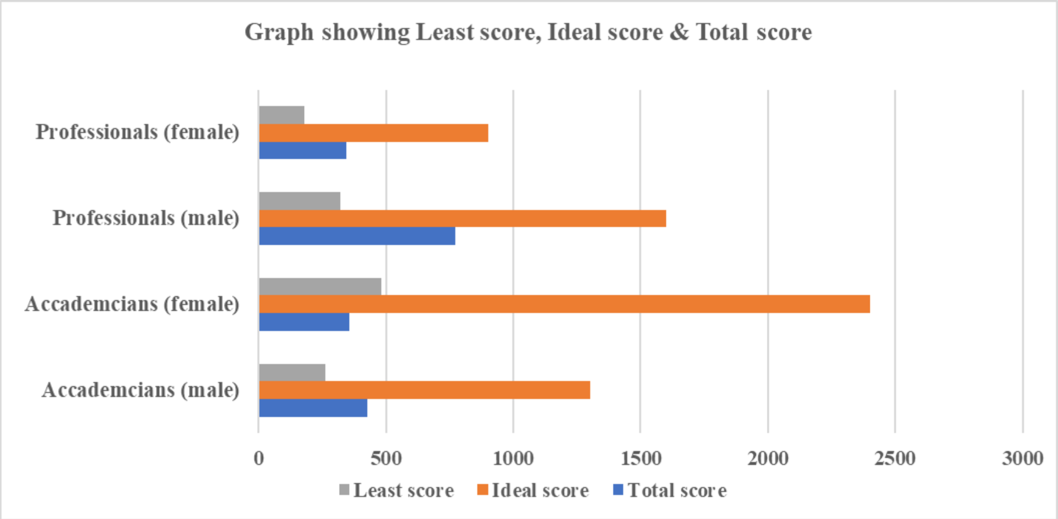
The table above shows the perception of respondents towards the various aspects of carbon credit accounting. The objective was to find out the level of awareness of carbon credit accounting and its reporting among academicians and accounting professionals having expertise in accounting. To analyze the perception the question was asked regarding ICAI norms, accounting standards, taxation policy, and CDM project, and also the opinion was taken towards the future perspective of carbon credits. The responses were analyzed on the basis of the Likert scale by giving ranking as 5, 4, 3,2,1. Here 5 stands for fully aware, 4 for partly aware, 3 for aware, 2 for neutral, and 1 for no opinion. The final score& was calculated by summing up the responses & multiplying them by their respective value.

The table below shows the computation of the ideal score and least score to find out the ideal score which is also known as the maximum score the question is divided by the highest value and no. of respondents from that particular group. To find out the value of the least score or minimum limit the equation is as follows no. of questions multiplied by the least score and multiply by the total no. of respondents from the group.

Table 2: Computation of Ideal Score and Least Scores

Category	Equation	Ideal score	Equation	Least Score
Academicians' (male)	(1O*5*26)	1300	(10*1*26)	260
Academicians' (female)	(10*5*48)	2400	(10*1*48)	480
Professionals (male)	(10*5*32)	1600	(10*1*32)	320
Professionals (female)	(10*5*18)	900	(10*1*18)	180

Source: Primary data



Findings

- It was found that the awareness level among male professionals in Madhya Pradesh is more than that of female professionals by 10.25% on the other hand the awareness level among male academicians is more by 22.93% than that of female academicians.
- The comparative analysis was done and it was found that professionals are 33.66% more awarded than those academicians in M.P.
- The awareness level about the CDP project is more than that of carbon credits among the respondents. It also shows that more than 32% of the respondent strongly agree that the CDP project will play a significant role in economic sustainability.
- Not more than 10 % of the respondents are aware of CERs (certified emission reduction) and the pricing of carbon credits. The respondent also has an opinion that carbon credit plays a vital role in making a greener environment.
- A lack of practical knowledge among academicians and professionals was found in the study.
- Based on secondary data sources, it was found that still there are no systematic guidelines or norms issued regarding carbon credit accounting and reporting. Different companies have adopted their methods of regarding carbon credit accounting and pricing of carbon credit.

- The study also shows that carbon credit helps companies in earning revenue as a secondary source of income. Still, the discussion is going on regarding Carbon tax and recording it as income.
- Findings show that there is no taxation policy regarding the income generated from the sale of carbon credit. If the government focuses on the taxation policy of carbon credit it would become a good source of revenue for the government.
- As per the study it was found that India is considered one of the biggest markets for the trading of carbon credit. The profit earned through carbon credit till now is approximately 25,000 crores – 35,000 crores.

Suggestions

- Carbon accounting should be introduced in the academic syllabus and this help in creating awareness among academicians, professionals, and students.
- Awareness must be created among the entrepreneurs about the CDP project and also these projects must be considered as a part of CSR activities and must include in Schedule VII of the Companies Act 2013. As the Carbon credit will help industries earn huge profits. As the industrialists try to reduce their carbon emissions an unutilized amount of carbon emission is then converted into carbon credits and made to trade in MCX. This will help to improve the climatic conditions of India and the world as industries will release fewer carbon emissions into the environment and this will make our environment greener.
- More scholars and researchers should work on this concept of carbon accounting and a great analysis should be done because this will give us the accurate accounting treatment of carbon credits also accounting standards regarding carbon accounting should be formed. So a uniform accounting system must be framed for recording, measuring, and pricing carbon credits.
- The industries which are exceeding their limits of carbon emissions in the environment the government should take up strict action regarding such industries by way of the collection of fines or imposing a “carbon tax” on it. 49 countries after analyzing their environmental reports as already impose such taxes so its a recommendation to the Indian government to make strict laws regarding this to safeguard their environment,
- Government should also give deductions in the Income Tax under the head PGBP to the enterprise so that they are encouraged to save more carbon credits.
- “Carbon offsetting” should also be encouraged as this will help achieve the target of NET-ZERO OR CARBON NEUTRALITY by 2070.
- Future carbon trading should be encouraged as it will increase the carbon derivative market. The future contract will encourage greener investment today to achieve future credits. We can simply say that your today’s action will reward you in the future with sustainable growth in future. The appraisal of future carbon credit contracts based on bringing out foreign technologies in India can also bring new technology to India and there is an upliftment in FOREIGN DIRECT INVESTMENT in India.
- SEBI as a regulatory body should make Reporting of Greenhouse gas mandatory in their books and auditing should be done of data recorded. It will help in creating transparency for the stakeholders and could also take strict action against the companies who are emitting high amounts of GHG gases.

Conclusion

A study shows that the role of carbon accounting is still controversial despite having a significant role in sustainable growth and making the environment greener. Carbon credits will help the enterprise to enhance its profits and income. Carbon accounting should critically engage with the business for sustainability. Carbon accounting has the potential to help even profit-seeking entities reduce carbon emissions as firms cannot make a profit if continue to manufacture carbon-intensity products. A proper approach should be adopted so that various accounting methods can be used for the improvement of carbon accounting systems in an interactive way. The US and European countries had already made a good regulatory policy regarding carbon accounting and had a good check on it. There should be a proper strategical way to enhance the mechanism of carbon accounting in India. The enterprise should be made aware of carbon accounting so that they will reduce their CO2 emissions in the environment and try to collect more carbon credits so that they can sell and earn huge amounts of profits. The awareness level should encourage among academicians, and professionals in the country. Carbon accounting should be justified in proper standards & measures. There should be proper measuring, recording, classifying & summarising of carbon credits and CO2 emissions in books in a systematic way. "CARBON OFFSETTING" & "CARBON SEQUESTRATION" are also the best methods that can be used on a large scale to reduce carbon emissions. To achieve a target of NET-ZERO by 2070 Carbon credit can play a significant role and would help the economy to make a Greener economy.

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