

FACTORS CONTRIBUTING AN ORGANIZATION TO INVEST IN CARBON OFFSET PROJECTS

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Abstract.

The increase of climate change impacts such as floods, rise of sea level and long drought periods has forced many countries to formulate and enforce effectively environmental regulations. However it is through undertaking carbon offset projects that help to reduce these impacts. This has been enabled many organization to comply with these environmental regulations. The study explores why an organization can be interested in investing in carbon offset projects. Based from the empirical literature review, findings of the study argued that compliance to the environmental regulations are the main driving force for an organization to invest in carbon offsetting projects. However, an organization can go beyond voluntarily to invest in order to increase energy efficiency and its supply sustainability. Moreover, an organization can undertake carbon offset projects due to rise of the cost of raw materials, improving values of shareholders, market pressure from the consumers, to increase product competition and as a corporative social responsibility.

Key words: Carbon offset project, Carbon trading, corporate social responsibility, compliance carbon offsetting, voluntary carbon offsetting.

Introduction

Carbon offset is a reduction of greenhouse gas in the atmosphere being produced by an organization directly or compensate that is produced somewhere by another organization (Lovell et al.2009). Since the adoption of Kyoto protocol in 1997, there is a growing interest of both individual and organization to participate in reducing the greenhouse gas emissions. Therefore the study will discuss what factors can results an organization to be interested in investing in carbon-offset project. I argue that under climate change regime, an organization can undertaking carbon offsetting project being motivated or driven and is inevitable. Due to currently international climate change policies and business competitiveness, an organization find in motion of even going beyond its internal environments. Many organizations currently are seeking to achieve production efficiency by reducing consumption of energy, corporative social responsibility and seeking value to shareholders. Furthermore in long run this makes an organization environmental proactive which build trust and positive image to the society and also improves its financial performances and sustainability for an organization.

An organization can be interested to invest in carbon offset projects through being motivated and driven by external pressures such as national regulations and non-governmental organizations but also to increase profit (Okereke 2007 and Vithessonthi 2009). Chan (2005) added that due to increasing demand of green products, most firms are motivated to undertake carbon management that increases

energy efficiency and profits. Through being motivation or driven an organization can adopt several measures in undertaking carbon management projects. Okereke (2007) pointed out some of the measures that a firm can adopt such as offsetting schemes that are mainly done through Clean Development Mechanism, Joint Implementation and Emission Trading. In order to increase efficiency and cost of operation, an organization can opt to use renewable energy such as solar or biofuels instead of using fossil fuels. Furthermore an organization can change new equipment and searching for substitutes of the carbon efficiency product. The investment through environmental education and awareness rising to the community is also one of the measures towards climate change where an organization can undertake. Current most of organizations are producing brochures and advertising through their websites or media on climate change impacts and how to avoid. Furthermore many organizations are advertising to the public how they are committed on reducing greenhouse gases through their production activities (Okereke 2007).

Research material and Methods

Research design

Robson (1993) and Moran – Ellis (1994) have argued that research design draws on information for answering research questions which will give overview of the study and its conclusion. Like wise the design of the study comprises three parts namely purpose of study, research questions and the method used for collecting data.

The purpose of the study undertaken is to evaluate why an organization can be interested in undertaking carbon-offset projects. The study will also cover on the factors that motivate and limit the firm to undertake carbon offset projects.

Research question

Based on the general research question, several questions have been structured which used for answering the main essay question. These questions are,

1. What factors motivate or drive an organization to undertake carbon offset project?
2. What are the advantages and disadvantages for the firm to invest in carbon offset projects?
3. What are the cost effective ways for an organization to undertake carbon offset projects?
4. What are the constraints and criticism of carbon offset projects?

Research methodology

Literature review was the only methodology used for collecting data that used to answer the research questions of the study. Through an intensive literature review the collection of relevant journals, reports and information from official websites were used. Among the journals used were journal of business review, Harvard Business Review, The journal of Business Strategy, The Corporation Ethics and the environment, Natural Resources Journals and Journal of management. Moreover the official website used during the collection of data was REDD+, UNFCCC, IPCC, WBCSD and NGER.

Empirical literature review

Carbon market

Under Kyoto protocol carbon is regarded as a product being sold and purchased in the market. However it differs from other commodities of being not tangible whereby buyers or consumer do not receive directly during the transaction process. Therefore the product (carbon) brings signification and financially worth through media advertisement, certificates, circulars, booklets and through receiving compensated packaged products. Moreover the United Nation Framework Convention on Climate change (UNFCCC) (Kyoto Protocol) carbon market deals with six Kyoto Protocol greenhouse gases, which are carbon dioxide (CO₂), methane (CH₄), Nitrous oxide (N₂O), Sulfur hexafluoride (SF₆), Hydro fluorocarbons (HFC_s) and Per fluorocarbons (PFC_s) (IPCC 2007). However because carbon dioxide is the most common and abundant anthropogenic greenhouse gas, all other Kyoto protocol greenhouse gases are calculate in tones of carbon dioxide equivalent (tCO₂e) (Bumpus 2011). Bailey and Maresh (2009) have argued that through the use of Global Warming Potential (GW) of 1 tone of carbon, carbon dioxide is being used as a baseline indicator to all other greenhouse gases of Kyoto protocol.

Carbon trading

Carbon trading by definition is the market based tool that is used for the aim of reducing emissions of greenhouse gases through trading of emissions of all six Kyoto protocol gases (Perdan and Azapagic 2011). Therefore through carbon trading schemes, an organization can effectively offset carbon mandatorily or voluntarily based (IPCC 2007). There has been several mandatory carbon trading scheme that are operating currently in different regional and countries. According to the UNFCC (1998) worldwide the current operating mandatory carbon trading are the European Union Emission Trading System (EU ETS), the Regional Greenhouse Gas Initiative (RGGI), New Zealand Emission Trading Scheme, Tokyo Metropolitan Trading Scheme and the New South Wales Greenhouse Gas Abatement Scheme (Australia). Despite of the fact that voluntary carbon offset currently is unregulated (Lovell et al.2009), worldwide there are several voluntary carbon trading schemes.

Since 1997 in Kyoto Japan during the UNFCCC conference, the carbon market became possible by voluntarily agreement with over 30 industrialized countries, which adopted the greenhouse gases emissions reduction initiatives (IPCC 2007). Carbon market is gaining interest and growing rapidly since 1997 whereby apart from reducing greenhouse gases emissions, the projects helps to achieve sustainable development by reducing the rural poverty in developing countries (Thomas et al. 2010, Yowel & Ferrell 2005 and Bumpus 2011). Carbon markets depend highly on both national and international political decisions on environmental regulations and laws. Under the cap and trade scheme, carbon markets operates through production of emissions reductions by either using project based transaction or emission allowance based trading of the greenhouse gases.

Operation of the carbon offset projects

Carbon offset projects aimed to minimize or remove the greenhouse gases emissions in order either to compensate the emissions made by the organization itself or made elsewhere. Carbon offset provides a

link between an organization, the natural environment (ecology) and social- economic activities (Bumpus 2011 and Bailey & Maresh 2009). It is also operated through the carbon markets using cap and trade or emission reduction allowances. According to the Intergovernmental Panel on Climate Change (IPCC 2007) through Kyoto protocol the binding emission allowances are set and agreed to each country to be reached at a specific period of time. Furthermore at national level the climate policies set and the government issue the achievable emission allowances cap or goal that will be achievable by every organization that in long term will be summed up to the total reduction target of the country to the Kyoto protocol commitments. The organization is required to emit the amount of greenhouse gases of equal or less than the permitted emissions allowances and these emissions permits are issued in the open market (IPCC 2007).

Furthermore if an organization failed to meet the required emissions reduction and emitted in excess, has to buy certified offset credits to recover the excess emissions while if reduced emissions successfully even below the allowed cap, the company can sell the emission permits in the open market or bank in for future uses. Each country has to undertake on going compliance monitoring at regular intervals example the National Greenhouse gases and Energy Reporting (NGER) in Australia.

Findings and Discussion

During evaluation of factors that either motivate or drive an organization to be interested investing in carbon offset projects, six findings emerged. These are (1) compliance carbon offsets (2) voluntary carbon offsets (3) growing relationship between an organization activity and natural environment (4) corporate social responsibility (5) Increases of public pressure towards climate change impacts and mitigations measures and (6) rise in the cost of raw materials and energy as well as maintaining the sustainability supply of energy.

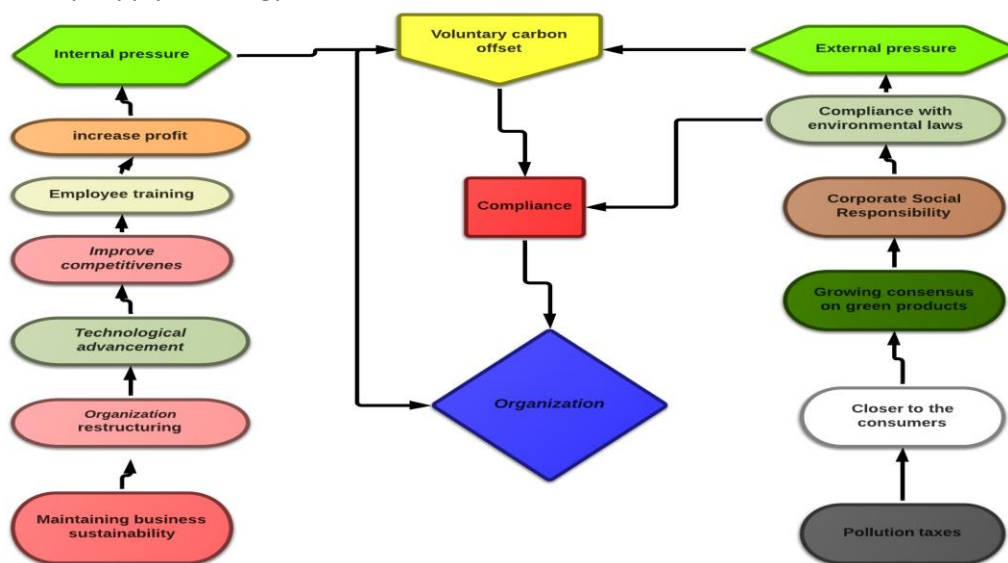


Figure 1: Internal and external factors that motivate or drive an organization to undertake carbon-offset project.

Source: Author's design, 2015

N.B: The study identified that voluntary carbon offset can be pre step to compliance scheme.

Compliance (regulatory) carbon offsetting

According to the United Nations Framework Convention on Climate Change (UNFCCC), compliance carbon market is the legal binding between the Kyoto protocol and all ratified developed countries of Annex 1 and economies in transition to reduce their greenhouse gases emissions. With example during 2008 – 2012 they signed to reduce by 5 percent of their greenhouse gases emissions. However these countries meet their target through three Kyoto flexible mechanisms namely Clean Development Mechanism (CDM), Joint Implementation (JI) and Emissions Trading (ET)(Caney 2010). The Clean Development Mechanism is the most effective and efficient with cost effective way of reducing greenhouse gases emission than the other mechanisms (Bernstein et al. 2010). By using flexible mechanisms organizations from ratified countries uses carbon credits under legal framework to reducing the greenhouse gases emissions. Moreover compliance credits are offered under international regulations and being utilized essentially by nation, state, offset organization and carbon entrepreneurs who already have experience about it (Lovell et al.2009).

Pinkse and Kolk (2005) described that climate change policies has motivated and driven many organizations to identify business strategies that help to respond to climate change and to enhance their financial performances. Organizations undertake climate change mitigation initiatives while undertaking their business strategic alternatives as well. The flexible mechanisms for reducing greenhouse gas emissions seems to be very effectively adopted by an organization in attaining emission reduction strategies through carbon offset projects (Eberlin and Matten 2009). Due to the flexibility of greenhouse gas reduction schemes, an organization can either buy emission credit or improve its facilities by adopting new environmental innovation that can results into greenhouse gas emission reduction (Caney 2010).

However the adoption and applicability of greenhouse gases emission reduction policies by an organization is highly influenced by the commitment of politicians toward national climate change policies (Pinkse and Kolk 2005). With example of European Union where “cap and trade” scheme is more adopted by the energy intense industries. Through the cap and trade scheme an industry can be allowed to emit a certain amount of greenhouse gas which helps the country to achieve its international commitment of reducing emission. Whereby in the United States of America, voluntary carbon offset is more developed for motivating companies to reduce or compensate reduction of greenhouse gases. However despite of an organization undertaking carbon offset projects to comply with the current or anticipate the future environmental regulations, the presence of market based incentives plays an important role on motivation. Khanna et al. (2007) argued that on the other side of environmental regulations compliance, an organization can be motivated to undertake carbon offset projects due to the presence of market based incentives for enhancing environmental friendly performances.

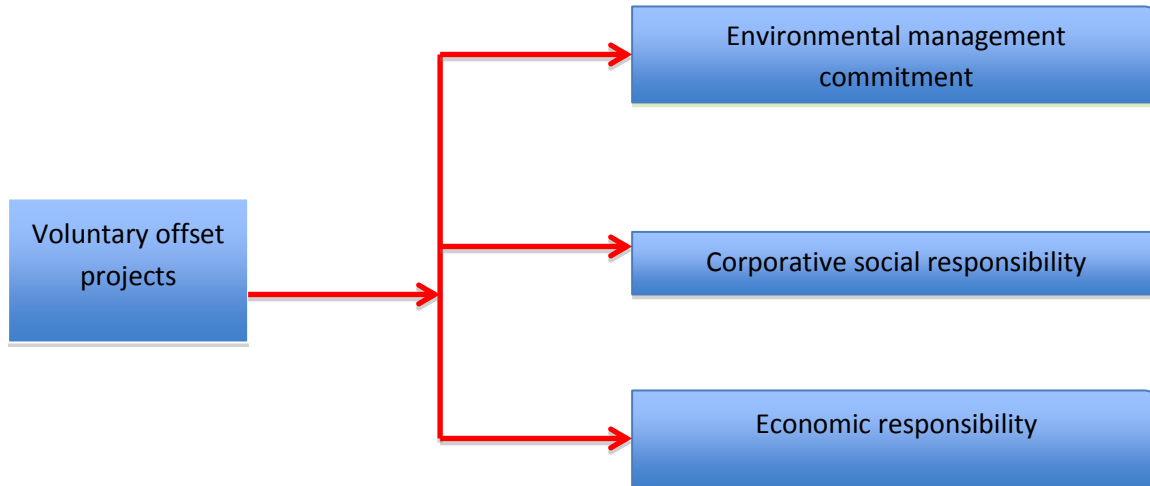
Beyond environmental regulation compliance**Voluntary (unregulated) carbon offset**

Figure 2: Voluntary carbon offset outcomes

Source: Author's design 2015

Lovell et al. (2009) argued that voluntary offset projects are smaller projects having cost effect on transaction costs, efficient and immediately in reducing greenhouse gas emission in the atmosphere. It is the fast developing carbon-offset option that motivates more individuals and corporations in reducing greenhouse gas emission (Bernstein et al. 2010). Like the clean development mechanism, voluntary carbon offset projects do not enhance greenhouse gases reduction but also enhance sustainable development through poverty alleviation in developing countries. Moreover voluntary carbon offset projects are flexible and focuses more on sustainable development and being operated in unregulated way. Furthermore, Bumpus (2011) added that the voluntary carbon offset credits are accredited to one or more private organization standards and are utilized by individuals or an organization. It is the most effective way in reducing greenhouse gas emission after identifying that the “command and control” cannot be the only means to overcome climate changes impacts and has some limits (Lovell et al. 2009). The voluntary carbon offset schemes has made the Unites States of America to be one the most country to be environmental proactive and resulted into formulation of many climate change regulations such as the “Clean Air Act” and “Climate bill S.1733” (Dorothy et al. 2003 and Pierre 2010).

Pinkse & Kolk (2005) and Bernstein et al. (2010) have argued that just like from its name (voluntary) the operation of voluntary carbon offset is voluntarily based to the individual or an organization. Normally individual, company or any emitter volunteer to offset its greenhouse gases emission through purchasing emissions credits from authorized company or individual and the money received will be used to implement project that will help to reduce greenhouse gases such as tree planting, renewable energy and energy efficiency. It provides an individual or company with flexible options in reducing the greenhouse gases in the atmosphere.

Organizations normally buy offsets in order either to build positive public image, relationship, gain financial opportunities or to be carbon neutral. Perdan and Azapagic (2011) outlined several voluntary carbon trading schemes in several countries such as Japan, China, South Korea, Australia and United States of America such as California voluntary carbon market. Like in clean development mechanism projects, voluntary carbon offset projects its integrity and quality are well monitored and assessed. Bernstein et al. (2010) and Pierre (2010) mentioned several known standards that keep tracking these projects such as the Gold standard, Panda standard (China), Climate, Community and Biodiversity (CCBS), the climate action reverse protocol and the voluntary carbon standard.

Relationship between an organization's activities and the natural environment

Increasing effects of global warming has resulted a growing concern for many organizations on reducing the impacts of their activities to the environment. Moreover as pointed out by Chan (2005) that there has been also a raising concern on formulating environmental regulations at national and international level that has been fueled by what he called "environmentalism".

Based on the concept model of Natural Resource- Based View (NRBV), currently the sustainability of the firm is much influenced by its natural environment (Hart 1995 and Hart & Dowell 2010). Apart from improving internal factors of an organization that improves financial performance, external factors such as maintaining the natural environment is the major key agenda among the investors. Porter and Van der Linde (1995), Cronin et al. (2011) and Eiadat et al. (2008) both have pointed that caring about the environment is inevitable for any organization despite of the fact that there are several challenges. The consideration is needed from accessing raw material up to the consumer level. There has been a growing concern of environmental friendly production the scientists and researchers especially during designing and innovating processing machines that can result into reduction of pollution. Hart (1995) added that designing competitive advantage of an organization must be focused on three aspects namely, high quality product or service, reducing negative externalities through processing and caring about the future of the firm and the environment. Moreover with regard to the above mentioned aspects together with either compliance or voluntarily commitment on reducing the greenhouse gas emission from an organization, carbon offset projects becomes more likely to be invested by an organization.

Hart (1995) mentioned three components of the natural resource based view as pollution prevention, product stewardship and sustainable development that are inter-related to one another. These three components drive an organization into better and sustainable financial performance. The natural resource based view enables an organization to be proactive in balancing the three aspects of economic, social and environment (Hart & Dowen 2011, Michael and Stinchfield 2010 and Victor et al. 2012).

Carbon offset projects can be undertaken when an organization is preventing or controlling pollution in its production. However pollution prevention involves replacement or improvement of production/services system, which enhance production efficiency, and also improves product stewardship (Hart and Dowell 2011). Chan (2005) added that the current emerging economy of an organization is linked with the Natural Resource Based View. Amores and EBook Corporation (2013)

have argued that the efficient environmental innovation of an organization leads to better firm performance and sustainability in its business, therefore motivates more an organization to invest in carbon offset projects.

It is obvious that currently an organization is much interested to go beyond even the compliance in order to achieve more profit. Product stewardship that involves product design and innovation attract more consumers while also help to improve pollution reduction as argued by Hart and Dowell (2011). Therefore in doing so an organization achieves dual goals of improving the natural environment and enhancing its financial condition (Johansson 2006 and Judge & Douglas 1998). Sustainable development as the third component of natural resource based view of the firm brings the firm more closely to the environment and the society (Hart 1995). Apart from making the firm sustainable in its function more concern is also focused to the society and reducing the environmental impact. Therefore due to influence of natural environments towards an organization, an organization is likely to be interested in investing carbon offset projects.

Corporate social responsibility

Several researchers have been defined the term Corporate Social Responsibility (CSR) into different ways. However according to the World Business Council for Sustainable Development (WBCSD), Corporate Social Responsibility is defined as “The commitment of a business to contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve the business and their quality of life”. Through undertaking corporate social responsibility, the firm improves advertisement of its products or services and also helps to shape the firm to reduce or stop any activity that will results into negative impacts to all stakeholders involved. Moreover corporate social responsibility creates a sustainable future for the business, society and the environment (Hart 1995).

Despite of the fact that the core objective of any firm is to make as much profit as possible together with sustaining the business, however there is a growing concern for many firm to involve corporate social responsibility in the production process. Corporate social responsibility enable the firm to develop positive consideration and values to the firm’s shareholders as well as other stakeholders including the society in general, hence improves financial performance of the firm. Because of growing awareness and concern of firm’s corporate social responsibility, firm concern on undertaking offsetting projects also increases because the firms want to have a positive reputation to all stakeholders. Chan (2005) argued that the growing concern of corporate social responsibilities have also increased the demand for the firm to undertake intensive environmental management strategies that help to reduce pollution and other environmental impacts produced by the firm.

Moreover Hart (1995) and Sroufe et al. (2000) have argued that due to raising competition in the business industry that has been fueled by globalization, has resulted a growing awareness among the consumers to demand green products that automatically force the firm to undertake carbon-offsetting projects. Shrivastava (1995) also added that corporation are the major driving wheel for the firm and in the society by motivating people to buy and use green products in an environmentally friendly way.

Therefore through undertaking carbon offset projects, the firm build positive image towards the society. Chan(2005) show that there is a great inter-relationship between corporative social responsibility, financial performance and reducing environmental impact from the firm's activities.

Okereke (2007) addressed the key role played by corporative carbon reduction program towards climate change. More organizations are being motivated to work in a corporate way which also helps to understand better environmental regulations and act accordingly. Through creating strong corporative social responsibilities, improves firms core values which stimulates purchasing behavior to the consumer hence improves firm's financial performances. Corporative social responsibilities enable the firm to get involved into a wide spectrum through involving different sectors and stakeholders into operation. Through corporative environmental transformation, firms are very proactive towards environmental issues even than the command and control model that undertake environmental problems in a disintegrated way (Shrivastava and Hart 1994).

Furthermore a corporative social responsibility plays a key role for the firm to achieve ecological sustainability (Hart 1995). Since the adoption of Kyoto protocol, there has been an increasing responsibility for both individual, companies, country and regional to make sure that emission of greenhouse gases are reduced as much as possible for every activity (Johansson 2006). Moreover under the firm perspectives, the raising awareness of the impact of greenhouse gas emission in the atmosphere has triggered positively many firms to make sure that their activities are not impacting the environment (Judge and Douglas 1998). Through corporate social responsibility an organization achieve ecological sustainability that helps to go beyond compliance and attain societal obligations.

Kibert and Ebook Corporation (2012) both have argued that the relationship between firm and shareholders drives the firm toward environmental sustainability. While the firm is struggling on performing better financially for shareholders, there is also an increasing concern on providing competent well being as a social responsibility. Shareholders are expecting to get return to what they have invested in the firm at the same time they want to see the firm has a positive reputation to the society that is an integral part in enhancing financial performance for the firm (Chan 2005). Moreover Buysse and Verbeke (2003) added that the firm need to be environmental proactive through formulation and implementing good environmental design and regulation that can lead to produce green product or services under green supply chain. However the firm its self cant achieve green product and supply chain unless it plays corporate social responsibility in a wide spectrum from accessing raw materials, product processing, packaging, supply (transportation) and packaging for the consumers (Johansson 2006). Therefore as the firms engage more in manufacturing/providing green product and supply, it builds more trust to the society hence and positive image which in turn increases purchasing power.

Eiadat et al. (2008) argued that apart from the increasing relationship between the firm and its shareholders as stated above, the emergence relationship between green products and competition is another aspect that motivates firm to undertake carbon offset projects. The accelerating rates in the relationship between green products and completion, many firms are investing in the research of

efficient new product development produced in appropriate environment (Pujari et al. 2003). Consumers and all stakeholders needed to be assured about the safety of the product while at the same time the firm needs to inform them towards its commitments in reducing greenhouse gases emissions which is undertaken through carbon offset projects.

Shrivastava and Hart (1994) have added that for many decades environmental responsibility was considered to be expensive and most of the firm have been taking as an advantage of not committing towards it through their activities. However the rise of environmentalism and strong environmental regulations during the 1990's have made many firms to start focusing on it (Pinkse and Kolk 2005). Through making strong commitments on environmental responsibilities it bring closer the firm to the consumers, build good image and improves competitiveness of the firm (Eiadat et al. 2008).

Increase of Public pressure toward climate change impacts and its mitigation measures.

Cronin et al. (2011) argued that the increases of public awareness on the impacts of climate changes and its mitigations has been driving indirectly an organization to invest in carbon offsetting projects. However the pressure comes as results of communities to access well environmental education from non-governmental organizations and individual environmental frontiers. Public pressure can be demonstrated well during 2010 from an example pointed out by Cronin et al. (2011) of oil leakage from BP ship in the Mexican gulf that resulted into large damage of the environment including marine organism. During that time BP consumers but both government, non government organizations and the community demanded BP to undertake an immediate strategic actions to rescue the environment.

The undertaking of carbon offset projects has a positive feedback to its consumers as noted by Khann et al. (2007) who argued that, the public pressure has developed the triple bottom line of competition, sustainability and consumers awareness. The rise of consumer's environmental education and awareness has increased purchasing decision power which now is more focused on environmental friendly produced products example of banana and coffee from organic farming (Galbreth and Ghosh 2010). The rising of public pressure towards climate change mitigation has also increased consumer's willingness to pay even beyond the normal prices for some goods from organizations that are committed in climate change mitigations. Khann et al. (2007) provide an example of hotels in Costa Rica that acquired certification for superior environmental management performance whereby their sales and profits increased. This has been a results of consumers being willing to pay higher prices which improved the competitive advantages and differentiate the organization from others. Therefore in turn this motivates more for organizations to invest in carbon offset projects.

The sustainability concept of an organization is not mainly depends on sustaining their business or services but also maintaining the planet and the people through corporative social responsibility (Lubin and Esty 2010). While the investors and directors are focusing in the cash flow of an organization to make sure they receive their return, there is a rising concept of sustaining the natural environmental through designing environmental friendly production. As argued by Chan (2005), Buysse & Verbeke (2003) and Lovell et al. (2009) that carbon offset initiatives can be undertaken by an organization through the use of renewable energy, controlling or reducing wastes and the design and use of energy

efficiency equipment. All these carbon offset options improves the organization performances in profits, planet and the people.

Rise in the cost of raw materials and energy, and maintaining the sustainability of energy supply.

As noted above that the main aim of a business organization is to generate more profit. However the profit will depend on the cost of production inputs such as capital, labor, raw materials and energy (fossil fuels) (Held et al. 2009). While the cost for capita and labor depends on intensive Research and Development (R&D) as well as stock exchange markets, the cost for raw material and energy changes with time and depends on its availability. However due to the current high demand of energy especially fossil fuels has resulted into raising its cost that affect the financial performance of an organization and its sustainability (Paul 2011).

Moreover the rising of energy cost has a negative feedback to the price of raw material through increasing its price due to increases price of fuels that is used for material transportation and pre product processing. The sustainability of energy supply under high demand poses a big challenge and motivating many organizations to look for a sustainable source of energy supply. Kinrade (2007) argued that sustainable use of energy will only come from renewable energy and not otherwise. Therefore the rise cost of raw material and energy prices motivates many organizations to invest on carbon offsetting projects like renewable energy and energy efficiency that reduce its cost and greenhouse gas emissions. Despite of the interest showed by many organizations to invest in emission reduction projects, the government has to motivate them through designing market based incentives like tax subsidies (Annan 2002).

Challenges and Criticism towards undertaking carbon offset projects.

Despite of the raising interest for an organization to invest in carbon offset projects and all climate change mitigation initiatives; there are several challenges, and criticisms that mainly based on the how the system operates. Moreover financial aspect seems to be the limiting factor not only for an organization but also for the government.

Thomas et al. (2010) pointed out that despite the Clean Development Mechanism which seems to be very active than any other Kyoto mechanisms are being faced with financial constraints particularly cash flow, high transaction costs and return time frame of the projects such as reforestation projects. IPCC (2007) argued that with example of reforestation projects, the gain return of the project can be hindered by fire, floods, long drought period, soil issues and species characteristics and adaptations. Furthermore Palm et al. (2009) added that the provision of Certified Emission Reduction (CERs) involves a lot of bureaucracies and limitations that takes more time for approval and is a barrier to the firms. Furthermore Shin et al. (2009) argued that in the developing countries where the clean development mechanism project operates are faced by incompetent human resources with poor skills and insufficient knowledge to undertake these projects. However carbon offset projects has been criticized that the projects operates under aspect of business as usual that also affect its return. The other criticism comes from the aspect of additionality in sense that the implementation of these projects results into lower

greenhouse gases emissions than before without the project and the issue of permanence that the reduction of greenhouse gases can not be reversed (Palm et al.2009).

In an organization the implementations of environmental management initiatives requires sufficient amount of fund which in one way or another is a limiting factor. Reducing greenhouse gas emissions by an organization needs sufficient funds, time through research and development which all these can limit the implementation (Shrivastava and Hart 1994). As noted earlier by Pierre (2010) that during implementation of environmental regulations for making an organization to comply with environmental regulations has a limit however through the pressure from the consumers can help to force the firm to comply.

Moreover the increase of environmental deterioration and commitment of the country to mitigate it have increased the formulation of more effective environmental regulations that affect organization performance. With example from China as pointed by Chan (2005) that China being the major emitter of greenhouse gases and ozone depleting particles, has enhanced environmental regulations together with upgrading its National Environmental Protection Administration (NEPA). Therefore due to the reinforcement has created a big challenge among the organization. Chan (2005) argued that between 1996 to 1999 about 15 most polluting industries closed down the business due to tightening and improved enforcement and administration of environmental management regulations. In long run this has an impact to the national economy. However Dorothy et al. (2003), Hart (1995) and Shrivastava and Hart (1994) argued that an organization could successfully implement environmental strategies into their short and long term business strategic plan but also the government has to support it.

Conclusion

Undertaking carbon offset projects seems to be the most cost effective way of reducing greenhouse gas emission and reducing the climate change consequences. Compliance, which is done by command and control, has a limit to enforce the environmental regulations. However the study findings shows that voluntary carbon offset schemes play an important role on reducing emissions of greenhouse gas and contributing to poverty alleviation in developing countries. Moreover the government has also to design flexible and effective market based incentives to motivate organizations and help to reduce the cost and bureaucracy during undertaking these projects.

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