EcoKraft LLC & Sustainable Travel Consulting

CARICOM Toolkit

Trainers Manual for the Caribbean Hotel Sector on Climate Responsibility, Carbon Credits and Participation in Carbon Offset Programmes

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1. Introduction

1.1 Overview

Tourism is a key component of Caribbean economies, and sustainable tourism development and a green economy are pillars of future success for the region within the global marketplace.

Measures to build resilience and adapt to the impacts of climate change are vital to the continued sustainability of the region's tourism sector. This learning kit is intended to inform the process of educating hotel operators, particularly small and medium-sized enterprises, about measures they can take to make their operations more climate change resilient. It will introduce some of the options and possibilities for carbon management, especially participation in programmes such as carbon offsetting.

The first two chapters provide an overview of the learning kit, including greater contextual understanding of climate change and tourism in the region, why it is a threat and how sustainable tourism is an opportunity. While the third chapter outlines pragmatic steps hotel operators can take to reduce carbon footprints from their operations while increasing savings, chapter four provides detailed information on carbon offsetting – finance, projects and programmes. Chapter 5 then offers communication and branding advice on how carbon offsets can be integrated in hotel operations as an additional "value-added" component, so as to increase market opportunities that are aligned with sustainable tourism activities.

1.2 Expected outcomes and usability

The learning kit addresses the need of making carbon finance and offset programmes an integral component of tourism business in the Caribbean, resulting in increased awareness about climate change and competitive advantages as individual operators and as a destination. It offers a chance to enhance the reputation of individual businesses to the region as a whole, from a destination that is already known for its biological and cultural wealth, into one that is also a world class sustainable destination.

The learning kit is designed for trainers in the accommodation sector to use as a tool to educate and raise awareness about the development and adoption of climate change resilient operations, in particular participation in carbon offsetting and carbon trading programmes. Trainers using this learning kit should achieve a more concise understanding of climate change, its risks and its opportunities. Because it is geared toward small to medium hotel operators, trainers should ensure that they fully understand the interrelationships of climate change and tourism. The learning kit will show how climate responsibility, carbon credits and participation in carbon offset programmes offer a number of benefits for business.

Trainers using this learning kit should be able to articulate and help hotel operators determine measures they can take to develop more resilient business practices and adapt to climate change while improving business operations and financial benefits. Trainers should also understand – and be able to teach hotel operators about – carbon offsetting, the role of carbon finance and what types of projects qualify for

carbon offsets, as well as how to integrate carbon offsets into sustainable travel operations. This includes being able to explain various funding mechanisms that enable providers and tourists themselves to directly support initiatives that link the travel experience with meaningful, local, environmentally-friendly projects. The learning kit will highlight the benefits of integrating these types of programmes into marketing and communications.

Last but not least, the conclusion of the manual will allow the trainer to reinforce the key messages and objectives of the learning kit.

Additional resources on definitions, carbon market players, carbon offset project development information, programmes, etc. are provided in Section 7 of the toolkit. Such resources can be integrated into workshops and seminars, e.g. by visiting websites to calculate carbon footprints, to provide trainees a more interactive and pragmatic learning experience.

A lesson plan, slide presentation and handout are provided as separate documents. These materials can be modified and adapted to suit the needs of the trainers and trainees.

2. Why sustainability matters to Caribbean hotel operators

2.1 Tourism on the rise

Tourism is one of the largest and most important industries on earth. And it continues to grow, proving the industry's resilience to fluctuating economic climates. According to the United Nations World Tourism Organization (UNWTO) it is estimated that the one-billionth tourist has already arrived somewhere in the world as of the end of 2012.

With nearly 24 million stay-over visitors in 2011, the importance and of tourism to the Caribbean region is even more significant, as it represents a higher percentage of GDP, employment and foreign exchange than global averages. According to the World Travel & Tourism Council (WTTC), the total contribution of travel and tourism to GDP to the Caribbean economic region (including wider effects from investment, the supply chain, etc.) was US$47.1bn in 2011, representing 13.9% of GDP. This is also expected to rise by 3.1% per year to USD65.5bn by 2022 (13.4% of GDP).[1]

The Caribbean is in fact one of the most tourism dependent regions in the world, and many Caribbean hotel businesses are small to medium enterprises, including individual or family-bun operations, which may a vital contribution to local economies.

Tourism can be extremely fickle as an economic driver. Mass tourism also has impacts upon itself, including the loss and degradation of biodiversity, as well as social and cultural impacts. In a world of increasing competitiveness among destinations, and given that many CARICOM nations have few options to develop alternative economic sectors, it is imperative that the tourism industry – including small hospitality providers - is involved in preserving the natural resources it depends upon.

[1] http://www.wttc.org/site_media/uploads/downloads/caribbean2012.pdf

2.2 Climate change cause and effects and measures to mitigate and adapt

Climate change caused by human activities was triggered during the Industrial Revolution as a result of the burning of fossil fuels that began about 250 years ago. An ever increasing appetite for inexpensive coal and other fossils led to increasing amounts of greenhouse gas emissions such as carbon dioxide (CO_2) that have been emitted into the atmosphere. Once emitted, these greenhouse gases (GHGs) remain potent for many decades and form a layer around the earth's atmosphere, which traps heat and causes average global temperatures to rise correlated with occurrences of extreme weather events.

While scientific uncertainties persist, an increasing wealth of evidence has led to a better understanding of the earth's complex system and our impact on climate change ultimately calling for meaningful climate action, particularly in developed countries.

The major challenge is that concentration of carbon dioxide and other greenhouse gases continue to increase while the ability of natural sinks to remove CO_2 from the atmosphere is being further reduced due to deforestation and other human-caused influences.

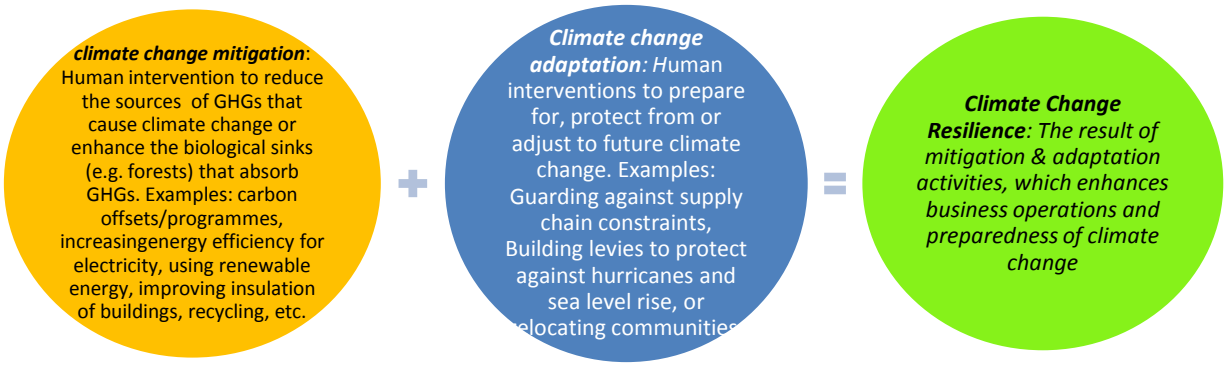
The impact of climate change on regional levels are diverse, including heat waves in one area and massive rain in another, sea level rise, floods and droughts, increased frequency of hurricanes, influence on agricultural crop yields, human health impacts, degradation of forests and other ecosystems such as coral reefs.

The Caribbean region is particularly vulnerable to climate change impacts, and this creates an urgency to build resilience.

In this learning kit, a number of terms will be introduced to the audience. The main topics that will be discussed are related to climate change adaptation, mitigation and resilience.

Climate change adaptation refers to human interventions that are meant to prepare for or adjust to future climate change, real or potential. These adjustments are most often meant to be protective, as actions that help to guard against negative impacts of climate change, such as building levies to protect against hurricanes and sea level rise, or relocating communities for example. It also can include preparation to guard against possible or potential (energy) supply chain constraints.

The United Nations defines ***climate change mitigation*** as a human intervention to reduce the sources or enhance the biological sinks – such as forests – that absorb greenhouse gases. Examples include using fossil fuels more efficiently for electricity generation, switching to renewable energy (e.g. solar or wind power), improving the insulation of buildings, reducing waste and increasing recycling efforts, all of which are relevant for hotel operators.



Such actions when implemented within broader climate change responsibility programmes increase ***climate change resilience***. Resilience in this context is defined as taking advantage of incentives for action and change by creating a shift from "business as usual" to broad-based strategies for achieving an overall improved business operations, better preparedness and heightened awareness of climate change.

> *Trainers should now have an understanding of and be able to explain the differences, interrelationships and goals of climate change mitigation, climate change adaptation and resilience, as these three definitions are key to understand the importance of developing and implementing best practices for sustainable tourism operations.*

2.3 Actual and potential impacts of climate change and climate variability on the Caribbean tourism sector

The Caribbean region contributes very little to a problem that impacts it significantly. Note that "the nations of CARICOM in the Caribbean together with Pacific island countries contribute less than 1% to global greenhouse gas (GHG) emissions (0.33% and 0.03% respectively), yet these countries are expected to be among the earliest and most impacted by climate change in the coming decades and are least able to adapt to climate change impacts. These nations' relatively small land masses, concentrations of population and infrastructure in coastal areas, limited economic base and dependency on natural resources, combined with limited financial, technical and institutional capacity all exacerbates their vulnerability to extreme events and climate change impacts." [2] As a result, the top priority for Caribbean countries is resilience through adaptation more so than mitigation as a regional policy and position.

[2] *An Overview of Modelling Climate Change: Impacts in the Caribbean Region with Contribution from the Pacific Islands, United Nations Development Programme* (UNDP), Barbados, West Indies, 2009)

Tourism is affected by the health and resilience of the natural resources it depends upon, not the least of which is a healthy climate. While the region has historically faced and been relatively resilient to volatile climate conditions, the existing and potential future impacts of climate change will exacerbate and increase vulnerability. There is mounting evidence regarding threats and existing impacts to Caribbean nations – particularly relatively low lying regions – related to sea level rise, warming waters and disruptive weather patterns. This includes significant impacts on coastal communities, infrastructure, water, energy and food security, health and safety and enormous associated economic impacts. From a recent report: "The impacts of a changing climate on the Caribbean and the islands of the Pacific are increasingly being manifested in economic and financial losses. According to the World Bank, in 2007 the Caribbean suffered US $10 billion in economic losses from weather related events representing over 13% of gross domestic product (GDP)."[3] The implications of this on tourism, as a primary economic driver, are significant.

These impacts in turn have rollover impacts related to the region's foremost pressing concerns such as poverty eradication, education, health and housing. In terms of specific vulnerabilities, the same report highlights specific future projected sea level rise vulnerabilities for CARICOM nations as follows:

Table: Summary of the vulnerability of countries with different topographical characteristics [4]

Topographic Setting	***Key Vulnerabilities***	***CARICOM Members***
Coastal plain below 10m and low lying islands	1.Flooding from storms and tsunamis 2.Inundation from high tidal levels 3.Salt water penetration of ground water reservoir	Guyana, Suriname, Belize, Jamaica (locally), Haiti (locally), Antigua and Barbuda, Bahamas
Coastal mangrove swamp	1.Erosion by storms 2.Erosion by waves during high tides	Guyana, Suriname, Belize, localized areas in other countries, e.g. Antigua and Barbuda, Barbados, Trinidad and Tobago
Coastal dunes	1.Erosion by storms and	Bahamas, Antigua and

[3] Simpson, M.C.,1 Scott, D.,2 New, M.,1 Sim, R.,2 Smith, D.,1 Harrison, M., 3 Eakin, C.M.,4 Warrick, R.,11 Strong, A.E.,4 Kouwenhoven, P.,5 Harrison, S.,3 Wilson, M.,6 Nelson, G.C.,7 Donner, S.,8 Kay, R.,9 Geldhill, D.K.,4 Liu, G.,4 Morgan, J.A.,4 Kleypas, J.A.,10 Mumby, P.J.,11 Palazzo, A.,7 Christensen, T.R.L.,4 Baskett, M.L.,12 Skirving, W.J.,4 Elrick, C.,12 Taylor, M.,13 Magalhaes, M.,7 Bell, J.,13 Burnett, J.B.,14 Rutty, M.K.,2 and Overmas, M.,15 Robertson, R.7 (2009) An Overview of Modelling Climate Change Impacts in the Caribbean Region with contribution from the Pacific Islands, United Nations Development Programme (UNDP), Barbados, West Indies

[4] ibid

	tsunamis	Barbuda
Coral reefs	1.Erosion by storms and tsunamis 2.Bleaching	Bahamas, St. Vincent and the Grenadines, local areas in Barbados, St. Lucia, Belize
Volcanic island coasts	1.Beach erosion 2.Landslides (locally)	Dominica, Grenada, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Montserrat

Rising sea levels on low lying atolls, coastal erosion and the loss of biodiversity, including the marine ecosystem due to factors such as coral bleaching, may have devastating impacts on the tourism industry regionally. Already the Caribbean has experience massive coral losses due to coral bleaching associated with increased sea temperatures in the Caribbean.[5] In addition, the quality and length of the tourist season is now in flux everywhere, affecting traveler numbers and decreasing business stability due to a fluctuating climate and an increase in number and intensity of extreme events such as hurricanes and storm surges.

In understanding the real and potential impacts of climate change in the Caribbean region and on the tourism sector, it is imperative to build adaptation and resilience into business operations, beginning with the concepts and actions explained in the following chapters.

2.4 Linkage between tourism, climate change and energy and water

As we have seen, small Caribbean economies are more exposed to external shocks and extreme weather events attributed to climate change than larger countries due to size, geography and because many of them depend on one or a few economic activities such as tourism. CARICOM nations are also almost completely dependent upon fossil fuel imports that are often times inconsistent, expensive and originate from insecure supply resources. As a result, energy independence based on sustainable, home-made-renewable-energy and energy efficiency measures will also support climate change adaptation and resilience.

Fortunately, improved energy efficiency and/or a switch to renewable energy use can also result in a direct reduction of costs through fuel savings. This applies to all energy consumers, including small to medium hotel operations that have to price these high costs into their services. Reduced fuel costs can also affect public spending, making resources available for other types of expenditure and investment, such as education and energy infrastructure.

[5] Mareba M. Scott BSc, MSc, PMP, Presentation: Climate Change and Sustaining Caribbean Tourism, 2012

This is particularly relevant in areas where tourism consumes a significant amount of a destination's energy, for example in Barbados, where approximately 30 percent of its power consumption comes from the tourism sector.[6] In terms of economic benefits for hotel providers note that utilities account for a significant percentage of total operating costs for a property. As such, cost-effective environmental management strategies can cut property-wide consumption without major investments.

In fact, the Caribbean Alliance for Sustainable Tourism (CAST), have identified that "Energy (electricity and fuels) typically makes up 10% to 20% of a small Caribbean hotel's operating costs, and up to 70% of utility costs. Energy conservation offers virtually all small hotels a quick way to reduce operating costs with relatively little capital investment."[7] CAST illustrates that low-cost, high payback opportunities for energy conservation exist that can lead to a reduction in energy use of 10-25%. Furthermore, "at a typical hotel, an investment in energy conservation of approximately US$ 20-30 per room will yield an annual savings of over US$ 100 per room[8], giving a one-year return on investment (ROI) of 300%."

Water conservation also saves both hotel costs and carbon emissions, for example through reduction in fossil fuel based energy used in municipal water services (reverse osmosis or wastewater treatment needs). In addition to climate resilience, saving water through efficiency measures also has other environmental benefits related to freshwater resources in the region, such as potential contamination to fresh water aquifers from over-exploitation of potable water resources and insufficient waste water treatment.

Trainers should now have an understanding of and be able to explain the impacts of climate change and climate vulnerability on Caribbean nations by making use of some examples.

2.5 Supporting clean energy development throughout the travel and tourism value chain

Sustainable tourism should include strategies for going carbon-neutral, in which properly implemented carbon offset programmes, in conjunction with climate responsible actions at the operational level, can become a catalyst to increase awareness about climate change. Carbon neutrality reflects the ultimate goal of zero net emissions into the atmosphere. This involves the integration of renewable energy projects and carbon credits into the travel industry, enhanced by linking the travel experience with projects themselves.

The tourism sector is a diversified service industry that includes companies of all sizes from small local service providers to large tour operators, hotel chains, airlines and cruise companies servicing global

[6] Barbados Hotel and Tourism Association (BHTA)
[7] Caribbean Alliance for Sustainable Tourism (CAST), http://www.caribbeanhotelandtourism.com/downloads/CHTAEF_Energy.pdf
[8] PA Consulting Group, 2001, includes procedural improvements (not just capital equipment).

markets. Within the context of the Caribbean hotel sector, for example, many SME enterprises exist that are locally owned and unique to the destination, which in turn is a reason why many international travelers are attracted by the region's local attractions, natural beauty and cultural heritage.

As travelers have become increasingly aware and concerned about climate change and environmental matters, hotel operators can take advantage of such growing concerns by offering travelers authentic and climate friendly services when they visit the Caribbean.

By starting with operational solutions that reduce energy consumption, decrease dependence on expensive fossil fuels and increase financial savings, combining this with the integration of carbon offsets or credits creates a "win-win" for hotel operators and the environment. The following chapters provide guidance on how to do so.

> ***T**rainers should now be able to show how climate responsible programmes have positive impacts in terms of (i) savings and benefits for hotel operators and (ii) improved sustainability of the tourism sector. A more specific discussion of recommended energy savings activities is described in Chapter 3.*

3. Five steps to climate friendly hotel operations

Carbon neutral represents the point at which carbon dioxide equivalent (CO_2e) emissions have been identified, measured, reduced where possible and 100% of the remaining emissions have been offset.

3.1 Key components of carbon neutral hotel operations

Energy is not a core business for hotel operators and to an even lesser extent GHG management. The solutions presented in this learning kit include innovative, affordable and accessible options to improve overall operational efficiency and competitiveness. Although every hotel operation requires tailor-made individualized solutions, a systematic framework can be applied to organize and execute programmes for *going carbon neutral*. From an operational perspective cost management - *and that does include energy performance programmes* - is a key component to run your business profitable.

As utilities in the Caribbean account for a significant percentage of total operating costs for a property, any reduction in costs through improved performance will help operators to run their business more efficiently and effectively.

The following outlined approach will detail steps, provide recommendations and actions that hotel operators can undertake to a) reduce their operational costs and b) reduce their carbon footprint along with reduction of fossil energy consumption and c) increase branding and marketing opportunities.

Energy Performance Programmes are an important management means by which organizations establish the systems and procedures necessary to achieve operational control and continual improvement of energy performance. In context of small to medium Caribbean hotel operators the ***key point is that when we are speaking about climate friendly operations a focus should be placed on controlling, monitoring and reducing energy & water related costs accompanied by continuous improvement of overall operational performance, NOT on greenhouse gas emissions control per say.***

It should be noted that the following framework is not a linear process; it is rather an iterative process of continuous improvement in as many as of the five areas as possible. These areas are:

1. *Calculation,*
2. *Avoidance,*
3. *Reduction,*
4. *Substitution and*
5. *Offsetting* of greenhouse gas (GHG) emissions.[9]

The overall mix of implementation strategies and activity will define the hotel operators' ability to improve climate and financial resilience over time. The authors note that *not all steps* are of equal importance for SME accommodations. Rather it very much depends on the individual hotel owner to identify "low hanging fruit", meaning the areas where they can more easily reduce costs and improve savings. This includes easily manageable changes in energy or water consumption that result in utility bill reductions and cost savings, such as switching from conventional to energy saving light bulbs.

The International Standard Organization (ISO) offers an action plan for developing countries, such as those located in the Caribbean. The goal is to "*contribute to improving developing countries' economic growth and access to world markets, enhancement of the lives of citizens, fostering innovation and technical progress and achieving sustainable development when considered from each of the economic, environmental and societal perspectives"*. ISO offers a broad range – **including energy performance programmes** – to ISO partners and members. Please see section 7.1.6 for more information on ISO progammes that are also attributed to small to medium enterprises in the Caribbean.

As learning and knowledge increases, hotel operators might identify additional cost saving opportunities. The importance is that they understand that steps 1-5 provide an outline of activities they *can* follow, *step by step.* If the sequence is followed, cost and energy savings can be accelerated.

[9] UNEP, "*Climate Change Adaptation and Mitigation in the Tourism Sector: Frameworks, Tools and Practices*",2008

DEVCO (the ISO committee on developing country matters) is the leading force that is responsible for actions taken in developing countries. DEVCO supports countries *and* industries to develop standards based on needs and provide assistance through technical assistance and training. Technical assistance and training focuses on many subjects including the role of standards in economic development, standards development & conformity assessment to name a few.[10]

> *As energy performance programmes might be of interest to hotel operators, it might be advisable to contact DEVCO and explore opportunities how Caribbean small to medium hotel operators can take part in training courses to benefit from standardized processes and procedures that aim to increase resilience in operations, improve energy performance, increase awareness & capacity while benefitting from additional marketing and market opportunities that come along with international accreditation.*

At a more advanced stage government support may be sought to invest in local clean energy or energy efficiency projects/programmes, and or savings from previous activities may allow for a more long term investment in the same.

> *As a general rule, hotel operators should focus primarily on energy sources they can **easily reduce and control**. In order to gain the largest benefits from such modus operandi, it is imperative that they will **continue to monitor the processing and collection of relevant data and make further improvements going forward**. If at any point in the future it is desired, the familiarity with energy performance measures will make it easier to translate raw data into refined carbon footprint calculations.*

3.2 Step One: Carbon footprint calculation and monitoring

As we have learned greenhouse gases are emitted when fossil fuels such as diesel are burned to generate electricity. Thus, a side benefit from controlling and reducing energy related costs is to learn about and account for tracking and monitoring greenhouse gas emissions.

You can't manage what you don't measure – that is why the first step of any meaningful climate action at an operational level is to measure your carbon footprint. Accurate and auditable data collection is at the foundation of all sustainability programmes.

There are significant differences in a property's capacity to manage energy and water consumption. In many of the larger facilities, specialized staff is hired to develop concise management plans to control energy and water usage. As most of the Caribbean hotel operations are smaller and only few have dedicated staff trained to manage energy efficiency or renewable energy programs, it is therefore of more immediate impetus for small to medium hotel operations to collect energy and fuel consumption

[10] http://www.iso.org/iso/home/about/iso-and-developing-countries/devco.htm

information (e.g. from utility bills, installed meters, etc.) instead of making use of more sophisticated GHG management systems that translate raw data into GHG emissions.

Once such energy and fuel information is collected, the hotel operator can then identify which areas offer the largest cost saving potential and subsequently implement measures to realize such benefits.

As an example, the following categorization illustrates how hotel operators can steer their attention on areas that are susceptible for cost reductions – and related greenhouse gas emission reductions - based on the degree of control they have to influence costs and outputs:

- **Direct control**: All energy sources that are owned and operated by the hotel. Examples include on-site fossil usage (gas burning stoves, boilers, diesel generators and other equipment), or any operation that functions as an on-site landfill or composting site, as well as fertilizers and pool maintenance or any car fleets that are owned and operated by the hotel operator.
- **Less Control**: Energy sources that are consumed. Examples include purchased electricity, heat or steam consumption. Although less control over the energy source exists (the utility supplies energy to the consumer) easy fixes such as turning off lights when not needed result in immediate cost reductions.
- **Least control**: Examples include business travel, bulk purchase items, as well as off- site waste disposal programmes. Such cost considerations require a more strategic perspective, for example as when to ask whether or not travel is required and whether or not any related costs can be reduced or avoided.

Such categorization might help at a more advanced stage to translate operational performance measures into greenhouse gas data and carbon footprint calculation.

> *In this chapter a brief introduction is given to steps 1 – 4, with more detailed guidance and attention paid to step 5 in Chapters 4&5, as the integration of carbon offsetting is a major portion of the toolkit manual.*

3.3 Step Two: Avoidance of greenhouse gas emissions

Avoidance means eliminating unnecessary GHG producing practices while reducing costs.

Hotel operators provide services to travelers that contribute to the hotel's energy, waste and water footprint. Eliminating certain activities that can be avoided without compromising the quality of the hotel product or service will reduce costs and overall environmental impact, as well as lowering GHG emissions.

Waste is a common but often overlooked by-product of hotel operations. Organic waste, for example, that is being disposed at landfills undergoes anaerobic decomposition and produces significant quantities of methane, which is a potent GHG.

Composting, on the contrary, is an entirely aerobic process, and well managed compost facilities do not produce any methane. Organic waste resulting from food processing and preparation, or from grounds maintenance, may be composted on-site.

The application of compost results in a reduced need for chemical fertilizers, pesticides, herbicides, and additives. For other types of waste, developing "*reduce, reuse, recycle*" programmes will foster a more conscious and cost effective use of scarce and expensive resources.

Another activity with multiple benefits for accommodation providers is avoiding imported food products in favour of local and sustainably farmed produce. This supports local communities and businesses and therefore creates a more authentic, nutritious and tasty experience for their customers. Costs for produce can be better managed if hotels develop supplier arrangements with local farmers. In addition, increasing consumption of local produce reduces GHG emissions that result from the production and transportation of imported goods, as less produce has to be imported from overseas.

Good Practice Example: The Ladera Resort in St. Lucia (http://www.ladera.com/) prides itself by offering "sustainable cooking sourced from locally harvested ingredients". The restaurant makes extensive use of and promotes local foods including crops, confectionary, fish, spices, condiments and bread. Every attempt is made to adapt traditional recipes using local substitutes. For example, guests are offered a choice of banana, mango, pineapple or passion fruit daiquiris instead of traditional strawberry daiquiris. Every Saturday, guests are taken on tour of the local market where they are educated about local produce, fish, herbs, spices, herbal remedies and folklore. On returning to the hotel, guests are offered cooking demonstration classes during which they cook using some of the items purchased in the market. They are also given the opportunity to buy locally bottled herbs and spices as souvenir items. In addition, the resort has instructed farmers and vendors regarding desirable health practices, storage, packaging, and presentation of food items.

3.4 Step Three: Reduction of avoidable GHG emissions

Reduction involves taking steps to reduce GHG emissions from those activities that cannot be avoided or eliminated. Reduction activities can also produce substantial energy and cost savings.

The greatest energy savings – and therefore cost savings – opportunities include reducing thermal energy use (heating and air conditioning) and electricity consumption. The focus typically is on increasing energy efficiency in order *to accomplish the same tasks and functions as before while using less energy*. Accommodation providers can follow a number of easy steps to increase energy savings:

- Indentify simple changes that can be made to save energy (turn off the lights – use motion detectors, only run dishwashers and washing machines at full loads).
- Continue to make improvements in equipment; Check whether the equipment is functioning efficiently at regularly.
- Replace conventional lights with energy saving lights or LEDs.
- Making use of natural aeration that reduces HVAC operations reduces energy consumption/costs.

Over time hotel operators will learn which areas can be further optimized and which areas require investments in energy efficient equipment/appliances. *Hotel operators might wish to reach out to their local utilities or governments to seek for additional advice and support*.

It is important to get hotel staff and employees engaged with energy savings. In keeping that in mind consider the following actions:

- Engage with staff and integrate the above activities into job responsibilities
- Increase employee awareness of energy conservation.
- Seek employee suggestions; locate suggestion boxes in prominent areas.
- Conduct contests for employees (e.g., posters, slogans, or conservation ideas).
- Install signs encouraging conservation in employee and customer places
- Assign an employee to monitor water/energy use and waste continuously, report back regularly, and make improvements.

In addition, the Caribbean Hotel Energy Efficiency Action Programme (CHENACT)[11] offers energy audits for small to medium hotels. CHENACT also aims to increase the use of renewable energies while fostering an overall reduction of GHG emissions.

Under a pilot project run in Barbados, for example, hotels have access to energy audits that detail their energy and water usage, including a report on total kilowatt hours (kWh) and GHG emissions. With such information at their disposal, hotel operators can work with CHENACT to develop and implement a bankable project and access a "smart fund" established in Barbados with financial support from the Inter-American Development Bank.

Any such projects should be able to demonstrate that investments in energy / water efficiency or renewable energy installations lead to savings over the longer term. Currently new projects are being implemented for the Bahamas and for Jamaica. CHENACT has done some great work by developing energy and water usage benchmarks.

More specifically, they established baselines for energy usage (kWh per guest/per night, with similar calculations available for water usage) that can be used as guides for operators and owners. Such information is available to illustrate the economic benefits of running energy (and water) efficient operations.

[11] http://www.caribbeanhotelandtourism.com/CASTchenact.php

!! *Hotel operators should contact CHENACT and inquire about such funding and energy audit support.*

3.5 Step Four: Substitution of resource intensive practices

The fourth step is to substitute practices that are responsible for a large amount of energy use with activities that have a lower carbon and operational cost *footprint*. Energy savings, as described in step three, will help your bottom line, though some of them require a higher up-front investment and longer return on investment (ROI) periods.

If hotel operators wish to expand such activities, they should begin by looking into replacement of older and inefficient equipment and appliances.

If the cost savings achieved are put aside as an *investment reserve*, such monies can later be used to invest in longer-term investments such as on-site renewable energy generation (e.g. bio-digesters, solar panels, mini wind turbines, etc.) that close the gap towards carbon and cost neutral operations.

The investment reserve could also be applied to replacing energy inefficient appliances such as outdated dishwashers, refrigerators, washing machines, etc. with modern highly efficient products.

!! Contact your local government to inquire about certain tax incentives or discounts when purchasing energy efficient equipment and to ask about any incentives that may be provided for residual power that is fed back into the grid.

3.6 Step Five: Carbon offsetting of unavoidable GHG emissions

After other avoidable GHGs are reduced; carbon offsetting of the remaining unavoidable emissions is the next step to reduce business carbon impact. As we will see in the next chapter, there are two key ways in which a Caribbean hotelier can potentially participate in the carbon markets and offsetting:

1. As an actual carbon reduction project owner.
2. By offsetting emissions and those of guests through the purchase of carbon credits through an established offsetting programme or third-party offset provider.

Either way, this requires due diligence and careful selection of verifiable projects that fulfill high quality criteria, as described in more detail below.

4. Carbon offsetting and its role in sustainable tourism programmes

4.1 What is carbon offsetting?

A carbon offset is a tradable environmental commodity representing a unit of GHG emissions reduction or avoidance expressed in carbon dioxide equivalent (Co2e). Each unit equates to one metric ton of CO2e. Carbon offsets are traded both in voluntary and compliance markets.

From a global perspective, it does not matter where GHG emissions are generated or where they are reduced or avoided. What is important from the point of view of climate change is that actions are taken to reduce the total amount of emissions. Scientific consensus states that carbon emissions must be reduced by 80% by 2050 to avoid catastrophic climate change.

Although Caribbean countries are not major contributors to global GHG emission quantities, Caribbean hotel operators can still play an important role in meeting emissions reductions targets; participation in carbon offsetting schemes enables them to play their part to foster more profitable operations, raise awareness about climate change and benefit from sustainable tourism marketing & branding.

Carbon offsetting is in many cases the fastest way for a business to achieve meaningful GHG emission reductions in the short term, since it often takes more time *and resources* to reduce GHG emissions internally and adjust operations accordingly. However, hotels must balance this with making increased operational efficiencies (as discussed above) and therefore it makes sense to get guests involved in carbon finance (as discussed in the next chapter)

A carbon offset represents the reduction or avoidance of GHG emissions generated from a specific project that is used to compensate for GHG emissions occurring somewhere else. Carbon offsetting entails the transactional process by which the purchaser of carbon offsets financially supports the selected carbon offset project.

Voluntary carbon markets are consumer oriented while compliance carbon markets address the need to keep compliance costs low. Due to the fact that hotel operators are consumer facing in every aspect of their business, voluntary carbon markets are more aligned with sustainable tourism practices. More on the differences and similarities of both markets will be explored throughout the following sections of this chapter.

4.2 The role of carbon finance

Carbon finance involves investment in innovative low-emission technologies, renewable energy, energy efficiency and other projects that result in reductions of GHG emissions. Carbon offsets generated from the project can then be traded in the open markets.

Carbon financing provides a means to leverage new private and public investment into projects located in developing countries, with the goal of reducing overall global greenhouse gas emissions.

It can increase the financial viability of environmental or energy projects by creating additional revenue streams in the form of carbon offsets. This helps overcome barriers for project development and implementation and improves access to capital, technologies and know-how.

As a cautionary note, carbon finance will typically recoup only a small portion of the capital costs needed for investments (3-5%) through the sale of carbon credits. Therefore, practically speaking, carbon finance should be seen as only one - among other - sources of financing for a project.

4.3 Carbon offset quality criteria

For a carbon offset to be credible it must meet essential quality criteria, including proof that it is:

- **Additional** – this means that the reduction in GHG emissions would not have occurred without the inclusion of carbon finance. There has been quite a bit of dispute about "additionality" mainly because of the definition of what constitutes to be a "business-as-usual" project versus what project can be defined as a "carbon offset project". The UNFCCC provides a guideline on how to assess additionality[12]. Such assessment (barrier analysis) should result in a clear understanding *that carbon finance was necessary to close financing gaps and thus to make carbon offset projects viable.*

- If the carbon offsets are used to support "carbon neutrality", they need to **be retired** from the carbon market (the carbon registry account where the carbon offsets are listed needs to reflect the deduction, more on project development in the following section) so that the credits cannot be double counted or sold more than once, subsequently a retirement certificate is being generated. A very similar approach is followed if the carbon offsets are used to fulfill regulatory obligations in context of compliance carbon markets and emissions trading schemes.

- That it addresses issues such as **permanence** (it delivers the reductions it stated and more specifically it also refers to the irreversibility of stated reductions). For example, if a project developer plants trees to sequester Co2, it takes a long time until these trees reach maturity and to fully absorb Co2 based on their estimated potentials. If a major portion of these trees

[12] http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v5.2.pdf

burns down during their growing phase as a result of wild fires, then stated (anticipated) reductions are reversed. Thus, the actual amount of Co2 is lower than the stated levels, which has to be reflected in project documentation. Only permanent – irreversible – reductions are being considered and accounted for. In many cases project developers of forestry projects carry an insurance which covers damages that are caused by infestation or wild fires. As a risk mitigation measure, more trees than necessary are planted around the project boundaries in so-called buffer zones. These planted areas act as a reserve to avoid reversibility of stated GHG emissions reductions/carbon sinks for land use/forestry projects.

- And **leakage** (that emissions reduction in one area doesn't cause an increase in emissions somewhere else). Carbon leakage in other words refers to a situation in which tougher emission curbs in one region lead industries there to transfer production to parts of the world with looser climate rules.

4.4 The process of buying carbon offsets on the voluntary carbon markets

As we have learned in chapter 3, for small to medium hotel operators the focus should be placed on cost saving measures that improve energy performance and energy independence more than on GHG emission control. And as we have learned from chapter 2 the linkage between tourism in the Caribbean and the impact on the environment caused by international arrivals at Caribbean destinations is substantial (a specific example is provided in chapter 5).

There are different ways that Caribbean hotel operators can get involved in carbon markets. We will learn more about the different options that are available for Caribbean hotel operators to participate in carbon offset programmes in the following sections.

In order to better understand the *process of acquiring carbon offsets from the voluntary carbon markets* the following step-by-step overview will be used for illustrative purposes.

Let's say a traveler from Europe booked a flight to the Caribbean. He/she would like to offset the unavoidable GHG emissions resulting from air travel by purchasing carbon offsets generated from a project located in the Caribbean. As such the purchase is entirely voluntary. What needs to happen?

Step 1 – Calculation: The traveler contacts a carbon offset retailer (see section 7.1.2 for list of online carbon calculators and carbon offset retailers). He/she might want to work with a carbon offset retailer such as Myclimate (www.myclimate.org) or the Carbon Neutral Company (www.carbonneutral.com). The traveler will be directed to an online carbon calculator. He/she plugs in the information required such as departure and arrival location and will find out what his calculated carbon footprint is.

Step 2 – Project Selection and Purchase: The traveler purchases the required amount of carbon offsets from the chosen project portfolio to neutralize ("offset") his/her flight emissions. Based on credit card information provided, the transaction takes place. More often than not, projects from the Caribbean are rarely available (see section 4.9 "Rich renewable energy resources & project types") due to the fact that only few carbon offset projects have been developed to date, though this may change over time.

Step 3 – Retirement and documentation: As a result of the transaction the buyer owns the carbon offset and the project owner receives the funds. In order to account for a carbon neutral activity, the purchased carbon offsets are then being retired. As a result of the retirement, the specific carbon offset amount is taken off the market and the carbon offset registry account is updated. Subsequently a retirement certificate is created that certifies that a GHG emission offset did take place.

Carbon market participants include a host of various players. There are buyers and sellers, intermediaries, speculators, financiers, developers and project owners. Carbon offset retailers play a special role. They are active in voluntary carbon markets. They offer carbon offset buyers, such as households, individuals and businesses services that include carbon footprint calculation for flights, business or household. They normally carry a carbon offset project portfolio in their inventories from which buyers can choose and buy from. With modern online technologies, the calculation, project selection and purchase of carbon offsets is very transaction friendly and the process is quite similar to other online shopping activities. Carbon offset retailers (listed in Ch.7) provide in many cases additional consulting services and communication support.

4.5 The carbon offset project development process

Before a project is being implemented, it is important that feasibility studies are being conducted that help to make a decision whether or not the project is viable and doable and that the project activity is eligible for carbon finance. A business plan further needs to be developed that results in positive return on investments. Depending on the scale of the project, additional sources of financing should be sought either via governmental subsidies or tax credits or in the form of debt or equity investments.

Eligible project activities include renewable energy, energy efficiency, forestry projects and many others where it can be proven that GHG emissions are being reduced or avoided by replacing GHG intensive fossil practices with climate friendly operations. As a case at hand, renewable energy projects, for example a solar PV (photo voltaic) park that is connected to a cluster of hotels, can either reduce operating costs and/or excess power can be sold back to the grid (depending on how policies are set at the utility and governmental level).

Each carbon offset project, regardless of whether it is intended for compliance markets or for voluntary markets, has to go through a standardized project development cycle. In order to account for carbon offsets, first a baseline is calculated. This baseline measures the GHG emissions in absence of the project (i.e. before a carbon offset project was created). The projected GHG emission reductions per year over the project's lifetime are then estimated and validated. The project then has to go through a registration and approval process so that the project can be listed on the appropriate registry. Once the project is operational, each year a third party will independently verify how many GHG emissions actually took place. The verification report is an important document. It provides evidence about the project's ability to *deliver* the reductions it was planned for. At the time of verification, verified reductions are

essentially risk-free as they now can be claimed as an actual and verified carbon offset for the year (vintage) in which carbon offsets were generated.

A full project development cycle that provides guidane through various steps from conceptual to commercialization stage is provided in section 7.1.4. Stage 1: Project concept, Stage 2: Verification and certification, Stage 3: Commercialization of carbon offsets. Additional information on "how to develop carbon offset projects" can be found on the following website, provided by the Verified Carbon Standard Association: http://v-c-s.org/develop-project.

4.6 Voluntary or compliance markets, which market has a better fit?

In an international context, carbon offsetting is considered to be voluntary if the offsetting scheme has not been established in order to reach legally binding GHG emission reduction targets, such as those imposed on many developed countries by the Kyoto Protocol. The Kyoto protocol is an international agreement linked to the United Nations Framework Convention on Climate Change (UNFCCC), ratified in 1997 and implemented in 2005.

The UNFCCC/Kyoto protocol targets a total of six greenhouse gases, mainly responsible for increasing levels of emissions in the atmosphere, namely a) Carbon dioxide (CO2) b) Methane (CH4), c) Nitrous oxide (N2O), d) Hydrofluorocarbons (HFCs), e) Perfluorocarbons (PFCs); and f) Sulphur hexafluoride (SF6).

This triggered the start of the European Emissions Trading Scheme by setting binding targets for 37 industrialized countries and the European community for reducing GHG emissions to targeted levels. Under the auspices of the Kyoto protocol, the Clean Development Mechanism (CDM), the largest compliance carbon market to date, was developed. The CDM supports carbon offset projects in developing countries.

4.6.1 Programme of Activities as a new compliance market instrument

The CDM provides for emissions reduction projects which generate Certified Emission Reduction (CERs) units which may be traded in emissions trading schemes. The goal and objective of the CDM is to allow regulated entities to invest in carbon offset projects located in developing countries at the lowest cost. A majority of CERs were issued based on destroying HFC-23 or N2O. Several weaknesses of the programme were addressed by the new Programme of Activities (PoA) that moves to approving 'bundles' of projects instead of accrediting each project individually. Projects have to be approved by the UN and transactional costs may be higher than those that are applicable in voluntary carbon markets.

Under the UNFCCC, developing countries such as those in the Caribbean may formulate Programmes of Activities (PoAs) or National Appropriate Mitigation Actions (NAMAs) for climate change mitigation and/or adaptation. This can help countries access carbon finance investment and international donor funding opportunities.

Currently there are no clearly formulated Programme of Activities (PoAs) or National Appropriate Mitigation Action plans (NAMAs) in the Caribbean region that explicitly address action in the tourism sector. If the region or specific countries explicitly includes the tourism sector as a priority in their PoA/NAMA, hotel enterprises may reap benefits from the investment opportunities generated.

That said, a number of activities are underway that may provide small to medium Caribbean hotel operators with assistance in participating in carbon offset progammes in the context of compliance markets. The Caribbean Hotel Energy Efficiency Action project (CHENACT) is an ongoing project with a stated objective to improve the competitiveness of small and medium sized hotels (<400 rooms) in the Caribbean region through improved use of energy with the emphasis on Renewable Energy and Micro-Generation.

CHENACT is sponsored by the Inter-American Development Bank, The Caribbean Hotel and Tourism Association, CAST, The Caribbean Tourism Organization and others. CHENACT proposes to "*bundle carbon emission reductions generated from energy efficiency or renewable energy application in the Caribbean hotel sector as a consequence of the CHENACT-AP. It will help hotel operators to certify resulting GHG emission reductions using United Nations carbon finance instruments*".[13]

As such developments unfold; small to medium Caribbean hotel operators may be able to access the compliance carbon market as part of a group project. This will thereby lower overall transaction and development costs for participating hotel operators and ease participation in carbon markets and programmes.

4.6.2 Voluntary carbon markets

The voluntary carbon market carbon currency is denoted in Verified Emission Reductions (VERs) and is by default the market of choice for individuals, businesses and others when making the decision to offset GHG emissions as a voluntary commitment of their choice. Voluntary markets are also an important tool for educating the public about climate change and their potential role in addressing the problem. Voluntary carbon offset programmes for the same reason are also more adapted to provide community benefits whereas compliance carbon offset programmes are mainly focusing on GHG emission reduction potentials and low cost compliance.

[13] http://www.iadb.org/en/news/news-releases/2011-10-13/caribbean-hotels-to-become-more-energy-efficient,9605.html

Voluntary carbon markets are not subject to any legally binding reduction targets and hence are less restrictive than compliance markets under the CDM. The innovation, flexibility and lower transaction costs of voluntary carbon markets can benefit buyers and sellers alike.

Voluntary carbon markets are driven by:

- **Personal concern**. Individuals purchase offsets as a way to live a greener lifestyle and support local communities, e.g. travelers purchase offsets to offset the emissions resulting from travel.
- **Corporate social responsibility and or sustainable business targets**. Participation in voluntary markets can be a way to demonstrate corporate responsibility and a commitment to responsible, sustainable business practices. Such companies are generally pro-active in pursuing sustainability targets.
- **Market pressure**, e.g. competitor activity, insurance costs, media and or shareholder pressure. Environmental legislation, industry trends and the competitive advantage that may be obtained from environmentally-friendly branding and marketing are all motives for companies to develop carbon offset projects and thereby create a "green image".

Compared to compliance markets for carbon offsetting, voluntary carbon offsets play a more significant role in the global travel and tourism industry. Some of the participants include several of the larger international airlines that bring tourists to the Caribbean. Smaller, regionally based travel providers, such as *Caribbean Airlines*, may also participate in the voluntary carbon markets (see Section 5.2.2 for an example with more information).

Existing standards help to hold carbon offset projects accountable to credibility, verifiability (e.g. in terms of CO2e reduction claims) as well as community benefits. Different standards – and markets - should be compared before deciding on which projects and related standards to support, this applies to both: Either to become a buyer of carbon offset or a carbon offset project developer. Community benefits play an important role to the entire value chain – from project developers to those who financially support the projects through carbon offsetting.

Among the most commonly used standards in the voluntary markets, the **Verified Carbon Standard** (VCS) has emerged as the market leader. The VCS was developed several years ago to encourage greater transparency in unregulated voluntary carbon markets and to foster a more widespread standardization of carbon offset project development. The VCS website (http://v-c-s.org) provides additional information on how to develop projects and how to participate in VCS carbon offset programmes[14].

The Climate, Community and Biodiversity (CCB) Standards (http://www.climate-standards.org/ccb-standards/) evaluate land-based carbon mitigation projects from the early stages of development

[14] http://v-c-s.org/develop-project

through implementation by promoting strict criteria that incorporate community benefits. Such land-based projects are essentially forest projects that either avoid deforestation or foster sustainable forest management.

Social Carbon (http://www.socialcarbon.org) uses "a set of analytical tools that assess the social, environmental and economic conditions of communities affected by emission reduction projects, measuring contributions to sustainable development through continuous monitoring" that are essentially applicable for all sorts of projects, not only land-based projects.

The Gold Standard (http://www.cdmgoldstandard.org) is considered to be a premium certification programme under which carbon offsets fetch high prices in the voluntary carbon markets. It is one of the eldest and most recognized standards in the marketplace and is considered a global carbon standard benchmark.

In summary, some of the most prominent standards under which projects are developed and should be aligned with include:

Voluntary Emission Reduction (VER) Project Standards

	Gold Standard	VER+	VCS - Verified Carbon Standard
Organisation	Gold Standard Foundation	TÜV Süd	Climate Group, IETA, WBCSD
Publicity	High quality VER-Standard	Globally well-known Designated Operational Entity (DOE) for verification of CDM projects	High -- developed through transatlantic stakeholder process
Basic Parameters	- Strong focus on positive effects on the environment and sustainability benefits - Only renewable energy and energy efficiency projects - High reliance on CDM methodologies	‣ largely in line with UNFCCC requirements for JI / CDM projects ‣ Proof of eligibility, additionality, permanence, exclusivity, avoidance of double-counting ‣ High reliance on CDM methodologies	‣ All types of emission reduction projects eligible ‣ Criteria: real, additional, measurable, permanent, independently verified ‣ Lower reliance on CDM methodologies

Other Standards: Social Carbon, CCB, CAR, American Carbon Registry, CarbonFix

4.7 Options for Caribbean hotel operators to participate in carbon markets

There are at least two ways for a Caribbean hotelier to potentially participate in the carbon market:

I. **Develop a project on your own:** The first one is to develop and implement a GHG emissions reduction project (carbon offset project) that generates carbon offsets and attracts carbon financing – e.g. provided by a bank or private sector investor to initiate the project. Hotel operators should be aware that lack of experience, scale and financial constraints remain a

hurdle and for those reasons they should consult with subject matter experts. It might turn out to be an advantage to discuss project plans further with local governments and utilities as they are the ones that need to develop the regulatory framework under which private sector investments in renewable energy and energy efficiency are either incentivized or discouraged.

Good Practice Example: Puerto Rico, although not a CARICOM nation, is a good regional example of adopting a net-metering rule. This has resulted in better conditions for private investors to generate power independently and to sell power back to the utility. An increase in independent power producers reduces the capacity requirements of the utilities' power plants and their need to meet future – and growing demand – on their own. Utilities will thereby still be able to sell their power at a profit, while reducing the costs coupled with maintaining and operating outdated power plants.

As discussed in the previous section, projects that are developed within the context of voluntary carbon markets might be more preferable than projects that are developed in the compliance markets, due the fact that approval processes and related costs tend to be lower in the voluntary markets.

And as we have learned, voluntary carbon markets are traditionally characterized by focusing more on socio-economic benefits whereas compliance markets are more about reducing compliance costs for regulated entities and maximizing scalability of projects. As processes to develop carbon offset projects are similar for both markets, yet development costs and eligibility of projects can vary greatly, small to medium hotel operators should rely more on voluntary carbon markets as opposed to compliance markets.

The interesting - yet not readily available - option is to develop PoAs in context of NAMAs for compliance markets, as discussed above in section 4.6.1. This development should be monitored and evaluated as 'bundled" projects across the tourism sector can become a viable option to access carbon finance and stimulate sustainable tourism operations across the region.

In any event, if hotel operators should choose to develop projects on their own or in alliance with other likeminded hotel operators to develop projects across the region, any resulting carbon offsets can then be traded in the open markets or included as part of the hotel's sustainable tourism marketing plan (See Chapter 5 "Communication").

Trainers should now be able to understand and explain to hotel operators the pros and cons that go along with developing projects on their own. Trainers should be aware of the different roles of voluntary vs. compliance markets and should be able to explain the difference to trainees. As a suggestion, hotel operators should develop an alliance that is able to share related costs. For further assistance, project developers should be contacted to better understand specific requirements. For a list of project developers, please refer to section 7.1.2.

II. **Participate in existing voluntary carbon offset programmes:** Essentially the participation in established carbon offset programmes is a low-risk, low cost option. Hotel operators should contact independent carbon offset providers (see list of a list of carbon offset providers in section 7.1.2) to purchase carbon offsets from them. They would go through the same process as an individual traveler (see example in section 4.4 above) by first calculating, selecting a project and then purchasing offsets to become a *carbon neutral hotel operation*.

In addition, hotel operators can also explore together with the carbon offset provider ways by which clients/guests are given the opportunity to offset the carbon footprint resulting from traveling by participating in the voluntary carbon market.

Some carbon offset retailers offer channel partnerships. Such partnerships are a way to build new revenue streams, increase customer retention and to get engaged with carbon offsets without absorbing development costs.

This may involve inviting guests to make donations/financial contributions that are then invested in an emissions-reduction project, either locally (if available) or elsewhere in the world. Also read chapter 5 "Communication" on how to develop marketing and branding strategies that support sustainable tourism activities.

> *Trainers should be able to understand and explain to hotel operators how they can get involved in voluntary carbon offset programmes. They should know how to contact carbon offset retailers and inquire about options to i) purchase offsets to go carbon neutral and ii) to participate in channel partnerships whereas travelers are directed to projects that are linked with Caribbean hotel operations to offset emissions from travel.*

4.8 Encouraging Guest Participation in Carbon Offset Programmes

Carbon offset programmes that connect people with place are an important toolbox for hotel operators to increase awareness about the issues of climate change, and to show leadership while reducing energy dependence and increase competitiveness as a means of sustainable tourism practices. Care should be taken about any GHG emissions reduction claims. Regardless of whether hotel operators choose to develop projects on their own, or participate in existing carbon offset programmes by going carbon neutral; communicating truthfully with the travel audience is paramount. ***All such claims should be verifiable and documentable*** *to avoid any reputational damage that might be encountered as a result of making false claims about their sustainability efforts, also referred to as "green washing".*

One approach is to integrate carbon offsetting or related donation programme into a company's booking and sales system by offering either an automatic carbon price add-on, or with a voluntary *opt-in*

or *opt-out* option. Some tourism businesses include a specified amount directly into the price of the trip (which can be hidden or visible), for example $1 per hotel night or $3 per tour. This will, if done properly, result in the highest benefit in terms of donations to specified projects and programmes.

Another approach is to offer a matching programme, for example a business matching up to 50% of the offset amount which may include air travel, thus providing an added incentive for customers to offset their emissions.

The least effective means for getting your clients to support an offsetting programme is to offer a programme or service – like a carbon calculator – without integrating it into your sales and booking systems.

> Travel providers may include carbon offsets in guest invoices (e.g. $1 per hotel room night) as a voluntary opt-out, resulting in a relatively high success rate of approximately 90 percent rate, but while still giving customers the option to choose whether or not they want to pay an additional 'donation' for offsetting (that supports community development – don't forget the co-benefits!). Another approach is to offer a voluntary opt-in donation, but this will typically result in a much lower (e.g. 5-10 percent) opt-in rates. As a result, automatic add-on with or without voluntary opt-out programmes are considered the best practice.

These programmes have to be communicated to customers before, during and/or after their visit; chapter 5 offers some advice on how to effectively communicate messages related to carbon-neutral and climate responsible initiatives.

4.9 Rich renewable energy resources & project types

> The most readily available project types are wind and solar projects. The reason behind this is that such technologies and related costs have reached levels of maturity and economies of scale that are important to attract investments. These robust and proven technologies thus are often among the first project types that are looked into. In addition, solar technologies that include photovoltaic installations and solar hot water can be coupled with other projects such as combined heat and water systems.

The Caribbean has abundant renewable energy resources. Due to its geographic location it is surrounded by ocean currents, volcanic activity, wind and plenty of sunlight. In recent years, upfront costs of renewable energy technologies - specifically wind and solar - have decreased while new technologies to harvest the energy from tidal waves, geothermal activities, biomass, hydrogen and fuel cells have emerged.

Unfortunately geothermal projects are not available throughout the Caribbean region, although this is changing. St. Lucia for example does have such energy available and its government is developing policies and programmes to tap into these energy sources and related market opportunities.

To illustrate some of the market potential, the Caribbean Renewable Energy Development Programme (CREDP)[15] notes that, "*photovoltaic cells generate an electric current through direct conversion of sun energy. They are made of silicium, a material that is obtained from ordinary quartz sand and thus is available in big quantities. Photovoltaic (PV) systems have the huge benefit not to use movable parts that need maintenance and potentially could fail.*

Prices of PV systems have significantly come down in the last couple of years which made photovoltaic a viable option for electricity generation via renewable energy. The Caribbean has huge solar potential that literally is only waiting to be harvested. More information about the CREDP programme can be found in section 7.1.6.

4.10 The Caribbean carbon market

> *The following examples are meant to showcase a number of success stories that were achieved through public-private partnerships. Hotel operators might want to refer to such projects when they reach out to their local governmental officials and inquire about to what extent (smaller scale) renewable energy projects can be initiated in support of the hotel & tourism industry.*

The Caribbean carbon market is in its infancy. Only a few larger renewable energy projects exist that are also accounted as carbon offset projects. Some of them are for compliance markets (CDM); others are registered under voluntary standards, most of which are hydro, biomass, wind projects:

The ***Aruba Wind Farm*** ("Nu Vader Piet")[16] is a 30 Megawatt (MW) project which has been operational since December 31, 2009 and supplies approximately 18% of Aruba's annual electricity demand. This is an example of a project that was registered for voluntary markets making use of the Gold Standard (see section 4.6.2).

As the purpose of the project is to utilize the wind resources of the area in the east coast region of Aruba in order to supply zero emission energy to the grid, the project directly abates greenhouse gas (GHG) emissions from conventional power plants on Aruba. That is to say that (almost) every kilowatt hour that is being generated and supplied to the electricity grid by the wind farm translates into an (almost) identical amount of avoided metric tons of CO_2e. The project is publicly listed on a registry where additional information can be accessed.[17]

[15] http://www.credp.org/index.php?option=com_content&view=article&id=52&Itemid=37
[16] http://www.nucapitalsvcs.com/index.php/vader-piet-aruba
[17] https://gs2.apx.com/mymodule/ProjectDoc/EditProjectDoc.asp?id1=816

An example of a Caribbean CDM project (compliance market) is the ***Jamaican Wigton Wind Farm Project***. The Wigton Wind Farm is the first commercial grid connected wind power plant in Jamaica. The project will lead to reduced greenhouse gas emissions because it will be displacing a largely fossil fuel based electricity generating system. The 20.7 MW project comprises 23 turbines, with each machine having a capacity of 900kW, with a goal of generating competitively priced renewable electricity. The plant's planned output is 62.97 million kilowatt hours per year - enough electricity to supply an estimated 25,000 homes. The fact that the electricity is renewable and does not require fuel imports makes the project even more important to Jamaica. The estimated amount of emission reductions over the 10 year crediting period are 525,400 t CO2,[18] which equates to taking nearly 100,000 passenger cars off of the road. (Source: http://www.epa.gov/cleanenergy/energy-resources/calculator.html)

Due to the region's abundance of renewable energy sources, theoretically many renewable energy projects could be built and thereby reduce energy dependence on fossil fuels, reduce electricity costs for hotel operators and other energy consumers, while – over time – developing more, greener local jobs and improving the overall economy. However, barriers such as access to finance coupled with lack of incentives to invest in renewable energy, are major hurdles at this juncture.

> *Solar panels are readily available to be installed today. These panels can generate a certain portion of the overall energy consumption of small to medium hotel operations, as they are flexible and customizable to project size and budget. Before any such investments are made, businesses should engage with their local utilities or governments and explore whether favorable rate structures exist or whether tax*

4.11 Caribbean success stories on climate friendly operations

The lack of a strong Caribbean carbon market should not be seen as a disincentive to implement climate responsible projects. Some examples are provided below of Caribbean hotels that are taking a low-carbon tourism path:

One of the more prominent examples directly related to sustainable tourism activities include solar roof installations on one the **Sandals Resorts International (SRI) properties in Jamaica**. [19] The Sandals resort as a result of reducing its environmental footprint has also become more operationally efficient and has increased benefits to its host communities through continuous community outreach. It also received two platinum certifications for sustainable travel and tourism. It is the only hotel company to be so recognized.

Another example is the **Blancaneaux Lodge, Belize**[20]. For nearly twenty years, Blancaneaux Lodge has implemented eco-friendly systems and procedures including a focus on renewable energy use and waste

[18] http://cdm.unfccc.int/Projects/DB/DNV-CUK1137055328.94/view
[19] http://m.jamaicaobserver.com/mobile/environment/-Sandals-leader-in-field-of-sustainable-practices-_11563251
[20] http://www.coppolaresorts.com/blancaneaux/facts/conservation

management. In 1993, the Coppolas installed a hydroelectric plant at the resort supplying the property with clean, renewable power. Excess energy that is generated is used to heat the hot pool at the resort's Waterfall Spa. In addition comprehensive waste management systems have been implemented that includes bulk purchasing, solid waste management, recycling and the composting of organic waste. Both resorts have also employed a stainless steel water bottle programmeaimed at reducing plastic water bottle consumption by guests.

True Blue Bay Boutique Resort, Grenada, received a Green Globe certification. True Blue Bay Resort has plans to make "True Green Rooms" which will use virtually no electricity and be powered by solar energy. In addition, the hotel discourages the use of plastic or Styrofoam on the property. Takeaway boxes and disposable cups are made from cardboard.[21]

4.12 A third way: going carbon neutral independently

Even if hotel operators are not involved in a carbon offset programme or participating in the carbon markets, activities can still be implemented to move towards carbon neutrality and to produce other important benefits.

Local renewable energy installations have the potential to reduce energy dependence and energy costs in the long term, in addition to reducing GHG emissions. Small scale projects that are installed near or next to hotels can include solar photovoltaic, solar hot water, micro wind turbines or biomass and biogas.

Residual power could possibly be fed back to the electricity grid, increasing reliability of the energy supply and making hotel operations more resilient and less vulnerable to high conventional electricity rates and inconsistent fuel supplies.

Guests could be invited to make donations to support the hotel's carbon neutral projects, or to support climate adaptation activities or projects being implemented by affiliated local communities.

When built into sustainable tourism programmes, the initiatives outlined above have the power to illustrate leadership, even if the hotel is not participating in a formal carbon offset programme. However, because such activities would not be in the context of an established verifiable carbon offset programme, operators need to be conscious of how they communicate with regard to the project and the claims that are being made. Integrating carbon offsets into sustainable tourism programmes

5. Implementation and Communications

5.1 Integrating carbon offsets into sustainable tourism programmes

Well designed carbons offset programmes increase public awareness about climate change, create local jobs, protect the environment and significantly contribute to sustainable development. By addressing an ever increasingly experiential and conscientious international travel audience, carbon offset

[21] http://www.truebluebay.com/the-resort

programmes will further enhance market and marketing opportunities for local and regional tourism providers. As we've seen, integrating sustainability into business operations complements cost savings through resource efficiencies (e.g. water, energy, waste).

At the same time, going green no longer creates competitive advantage. Rather, it is now expected by consumers, and not-doing so is a competitive disadvantage. From design and building for hotels to operations, as well as complementary environmental management systems and related communications, this includes integrating carbon credits or offsets into the traveler experience.

As discussed previously, although the Caribbean collectively contributes a very small amount of GHG emissions globally, tourism in the region itself is impacted through – among others - air travel, which contributes a disproportionate amount of GHGs globally per person. For example, a return flight from Frankfurt, Germany to Bridgetown, Barbados for a single passenger, economic class, will result in 5,260 kg of CO_2 (Source: atmosfair, a German offset provider - https://www.atmosfair.de/en/act-now/contribute-now/offset-your-flight). This carbon footprint is more than twice the amount a middle class car (12,000 km) emits over an entire year. Addressing these issues in a positive way will enhance visitor experience and demand.

Global Implications, Local Impacts - The high carbon footprint resulting from flights in the example above also has direct implications, such as certain market segments voluntarily opting to not travel long haul distances to destinations such as the Caribbean (e.g. Germany and the United Kingdom). This challenge, however, also poses great opportunities, for example in connecting carbon projects and credits (such as through renewable energy generation) to travelers themselves. This would allow visitors to both directly support and better experience the *positive* impacts they are having on the places they visit by contributing directly to sustainable community development and climate mitigation.

Everyone wants to feel good or at least guiltless when visiting a foreign, exotic and - in the case of the Caribbean - biologically and culturally rich destinations While small scale carbon offsetting may not directly make a significant difference to the mitigation of climate change globally, it does connect (overseas) travelers with people and place by supporting sustainable community development projects. It also broadens education and action regarding climate mitigation with the larger travel and tourism industry, consumers and the destination. So there are knock on effects and an overall increase in climate mitigation activity. The challenge is in the implementation, presentation and communications.

5.1.1 Create a tangible and authentic experience: Connect travelers with people and projects

As mentioned above, a key aspect of any carbon offset programme is to connect your customer base with the projects and destination itself. If visitors to a destination can relate directly to the programmes and their associated benefits, especially local benefits, then they will realize a much more tangible and authentic experience. They will feel better about themselves and feel as though their trip is actually making a positive difference in the world. Even if the carbon project itself is further overseas, you can still provide a tangible connection by *telling the story*.

This will result in increased customer loyalty and marketing and communications benefits if done properly. It illustrates a leadership role to your customer base and enhances the trip experience on the ground.

5.2 Marketing and Communications – become a champion of change

Individual businesses to entire tourism sectors and destinations have the power to create positive education, action and change, while reaping the benefits of supporting sustainable tourism initiatives. From a marketing and communications standpoint, programmes that involve carbon offsets or other related donation programmes should complement existing environmental and sustainable tourism activities (e.g. energy efficiency, donating to local charities, etc.), as well as related communications.

5.2.1 Creating an appealing story for the travel industry

Keep in mind that carbon offsetting is not simply a tool for businesses that allows for the sale of small amounts of clean renewable energy or other certified carbon reduction projects. In fact, it is important to be aware of criticism of carbon offset schemes.

> Carbon offsets are sometimes regarded as a way to buy your way out of meaningful climate action. The important piece is that carbon offsets ***in combination with*** actions (as outlined in chapter 3) that are taken to eliminate, reduce and substitute GHG emissions at the operational (or household) level are important climate responsible measures. Carbon offset programmes are specifically meant to "offset" unavoidable GHG emissions that cannot be reduced any further in the short term. They are directed to accelerate investments in innovative technologies, increase awareness about climate change, support local communities & help to restore biodiversity and ease access to capital. Carbon offsets on a standalone basis are thus not sufficient as we all – individuals and businesses alike - are tasked to reduce **global** GHG emissions and not to focus on offsetting alone.

Carbon offset programmes do provide a valuable service to the public – and the tourism sector in particular - as a way to participate directly in addressing global climate change at a personal level, allowing the business itself and or guests to positively impact the environment, local communities and the health of the climate during their stay. This is the message to get across.

Any sustainable or social responsible activity should be integrated into the core of the business activity and related communications, rather than as an add-on. Carbon offsetting is no exception (e.g. *Reduce, Reuse, Recycle then Offset)*. Once you have identified the project benefits integrate them into your business marketing and communications in tandem with core messaging.

Do not highlight "offsetting" but rather position it as supporting, donating or investing in (as a business and or with customer support): community development, renewable energy, energy efficiency and or other land use related projects.

Next, in addition to the human element characteristics related to a particular project as mentioned in the above two sections, explain the ways in which your customers are helping out when they support these programmes or stay with you because you do. Explain, for example, that you as a business or they as customers, are helping to create a number of jobs or conserve a forest – but be specific! If you - as a business, and or in conjunction with your customers - have offset a significant amount of GHG emissions, you can also equate the total volume of offset amount to tangible "carbon offset equivalent" that people can better relate to. For example, "We have offset X metric tonnes of CO2e, which equates to taking Y number of automobiles off of the road for a year, or replanting Z acres of forest."

As we have learned from chapter 3, carbon neutral represents the point at which carbon dioxide equivalent (CO2e) emissions have been identified, measured, reduced where possible and 100% of the remaining emissions have been offset. Supported project types include renewable energy, energy efficiency and/or other projects such as reforestation projects. All projects should adhere to high quality standards that take into account community benefits.

These programmes have to be communicated to your customers before, during and or after their visit, so consider employee to customer engagement communications.

The following are some suggested brief messages that travel providers can use to encourage carbon offset or donation sales. These approaches could be verbal (for example upon check-in or check-out), in room brochures, through web bookings and or in invoices. For example:

- "Support renewable energy for US$1 per night to support clean energy and local community development (which we've automatically added to your bill but you are welcome to take off)"

- "Would you like make a positive environmental impact and support renewable energy during your stay with us? Just tick this box and we will add $1 to your bill which will be donated to…"

- "You can offset your transportation to the hotel today with a verified carbon offset certificate that supports X project."

Important! Regardless of your approach, ensure that you are completely honest and transparent in your communications. Consumers are generally very discerning and often skeptical, especially when it comes to green claims. In fact modesty and subtlety in claims should be seriously considered.

Integrating these elements into communications and marketing, including online and social media, and communications will result in:

- Creating another touch point with your travelers and deepened customer loyalty
- Viral customer expansion

- Differentiating your business from competitors
- A proactive participation solution with relatively simple actions
- Generating awareness and momentum for changes necessary to mitigate climate change and support positive, healthy community development and protection of biodiversity
- Showing a leadership role to your clients and employees
- Enhancing the Caribbean as a sustainable tourism destination

5.2.2 Community benefits

Carbon offset projects as discussed in Chapter 4 typically have strong community benefits ("co-benefits") in addition to having clear GHG emission reduction potential. In fact both compliance market standards (CDM) and voluntary market standards to various degrees require and account for co-benefits. The result is that while tourism businesses and even entire sectors focused on destination impacts can achieve their energy and carbon management goals, local communities benefit greatly as well through the creation of tangible, local on the ground socio-economic benefits. These may include:

- Sustainable energy development
- Destination energy independence and stability
- Technology transfer
- Environmental protection
- Job creation
- Improved local quality of life
- Improved tourism product quality
- Increased customer loyalty
- Expanded marketing benefits
- Increased market share

As such, integrating carbon finance and GHG emission reduction activities through carbon offsets becomes an integral component of linking the travel experience with projects and communities themselves. This creates a much more compelling story to tell for internal (employee) and external (customer) communications and marketing. Once you are supporting directly and/or allowing your customers to support a specific project, you can create a compelling story outlining the benefits.

Consider highlighting communities with regard to the chosen offset projects and identify, quantify and communicate benefits of the project. Even if you are initiating a simple donation programme not directly connected to a formal participation in a carbon offset programme, the approach is the same.

The following is an example of a regional carbon offset project, which illustrates the type of ecological and community benefits travel providers should be identifying, and integrating into communications in order to create a compelling story:

Good Practice Example: Forest Carbon Offset LLC is a company that offers several offset projects in Belize. One is the Bull Run Creek Ecological Preserve, which is validated by the Climate, Community, and Biodiversity Alliance (CCBA) Standard, Gold Level and the Verified Carbon Standard (VCS). As they describe it: "The core objective of this project is to commercialize the forest carbon offsets at the Bull Run Creek Ecological Preserve near Punta Gorda, Belize, Central America. This property has been the site of a groundbreaking effort to use ecotourism as a funding source for land preservation. Due to the global economic downturn it is imperative that additional funding sources be secured to stabilize the operation. This land is currently under immediate threat of land conversion for agriculture, and it contains documented populations of internationally protected biodiversity.

To fund this activity Bull Run Creek Ecological Preserve will offset global carbon emissions through the development of a large-scale avoided deforestation project. The current threat level for these properties is immediate from citrus and aquaculture development. The total project will protect 12,871 acres (5,211 ha) of humid, broadleaf tropical lowland forest. This property abuts and drains into the Port Honduras Marine Sanctuary, the most pristine part of the largest coral reef in the Western Hemisphere.

The project benefits, are very compelling and would speak directly to tourists. These benefits include:

- Protects a significant coastal property consisting of a rapidly declining lowland broadleaf forest type in Belize, including significant wildlife protection (15 IUCN species) for many globally rare and threatened species in a world-class biodiversity hotspot[22]
- Protects areas that provide critical ecosystem services (e.g., hydrological services, erosion control, fire control);
- Protects areas that are fundamental for meeting the basic needs of local communities (e.g., for essential food, fuel, fodder, medicines or building materials without readily available alternatives);
- Protects areas that are critical for the traditional cultural identity of communities (e.g., areas of cultural, ecological, economic or religious significance identified in collaboration with the communities);
- Employment of individuals from the local communities, from ecotourism to patrolling and monitoring the Project Area, including of the encouragement of employment of women and underrepresented minorities.[23]

(Source: http://www.coderedd.org/redd-project/forest-carbon-offsets/#.UPqkRPLG-Vq)

As discussed, carbon offset programmes that connect tourists with people and place will enable visitors to feel better about themselves and their trip. For example, if you as a business are supporting the carbon offset project highlighted above, communicate the benefits by creating an emotional connection based on the facts presented - for example by illustrating with specific people/families - and using visuals such as community and landscape photos to the extent possible.

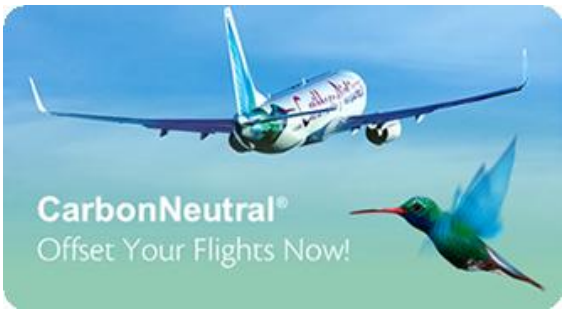
[22] Conservation International -- http://www.biodiversityhotspots.org/Pages/default.aspx

[23] https://s3.amazonaws.com/CCBA/Projects/Boden_Creek_Ecological_Preserve_Project/CCB_Gold_BCEP_Project_Design_Document_ver_1_021010.pdf

This can produce customer loyalty, as well as communications and marketing benefits as customers feel as though their trip is actually making a positive difference in the world while supporting the preservation of the biologically rich and beautiful region they are visiting.

Effective communication illustrates a leadership role to customers and enhances the actual trip experience on the ground. Even if the carbon project(s) supported are further away, for example somewhere else in Latin America or further abroad, the most important point is in positioning the *story* related communications in a positive way that travelers can relate to.

See the following sidebox for a good regional example with Caribbean Airlines, which illustrates how a company compliments their social responsibility activities with a carbon offset project in order to create a compelling story that is linked with their business and brand:



Good Practice Example: **C**aribbean Airlines has a carbon offset programme, and they have created a media message to support it. Communications include highlighting core operational approaches the airline takes to implement green and sustainable practices, such as its fuel efficiency improvements. *From their website "One of our biggest projects to reduce carbon emissions is investing in wing tips for our entire Boeing 737-800 fleet.* That project alone will decrease our CO2 emissions by up to 3,825 tonnes." The airline complements this with carbon offsetting, taking advantage of core communications related to the beauty of the region and how that ties into the benefits of offsetting: "Caribbean Airlines is committed to operating efficiently and environmentally-friendly. We recognize that we fly in one of the most beautiful parts of the world, and we want to protect our wondrous ecosystem to keep it beautiful. That's why we subscribe to carbon offsetting practices. Carbon offsetting is a method that allows us and others to effectively reduce the generation and effect of carbon emissions which contributes to global warming." They do so by investing in offset projects "like planting trees or swapping kerosene in remote areas of India for 'solar panels."

Even if you are not supporting "carbon offsets", but would still like to donate directly - or allow your guests to donate - to a philanthropic project, the communication considerations related to community benefits are the same. Here are some project examples that are not directly related to carbon credits but are good tourism provider communication examples:

- **Virgin Holidays** runs responsible tourism programmes in the Caribbean, which support climate change adaptation via a coral reef and fisheries conservation initiative in Bluefields Bay, Jamaica. Supported by the travel foundation you can view their great work here: http://www.thetravelfoundation.org.uk/images/media/Bluefields_summary_2012_FINAL.pdf,%20http:/www.bepajamaica.org/,%20http:/www.greenantilles.com/2012/01/11/video-virgin-holidays-protects-coral-reefs-and-livelihoods-in-the-caribbean/

- **The Mockingbird Hill hotel** in Jamaica is a very socially and environmentally conscious small hotel, and they include a very strong sustainable tourism message on their website, available here: http://www.hotelmockingbirdhill.com/en-sustainability.shtml

Both examples illustrate a great approach to messaging and telling a story about both the company's ethos, as well as benefits of their activities.

> *When viewing the websites of the above two examples note the different approaches between the two businesses. Virgin Holidays, for example, focuses exclusively the philanthropy, meaning the project itself and the associated community benefits. Whereas, The Mockingbird Hotel in Jamaica illustrates its commitment to sustainability throughout its operations and its communication reflects that.*

5.2.3 Creating customer and employee loyalty

Establishing and maintaining positive, beneficial relationships with travelers requires understanding how to develop an authentic voice and utilise all communications channels to capitalize on every interaction. This is also true with your internal customers – your staff - whom are increasingly interested in working with socially and environmentally responsible companies. This means ensuring that people are aware that participation in carbon projects has benefits that have been covered in the above sections.

An internal employee strategy should complement external customer communication, whether it is related to environmental management as outlined in earlier chapters, and or carbon offsetting, including the following elements:

- Ensure there is buy-in from management who are committed to building employee support;
- Engage with staff and integrate activities into job responsibilities;
- Increase employee awareness of the issues (energy/water conservation, carbon offsetting, etc.);
- Seek employee suggestions; locate suggestion boxes in prominent areas;
- Conduct contests for employees (e.g., posters, slogans, or conservation ideas);
- Install signs educating and or encouraging participation in employee and customer places
- Assign an employee to measure and monitor continuously your carbon footprint (but it can also be related to water/energy use and waste); Report back regularly and make improvements.
- Set goals and objectives

- Measure and monitor
- Get everyone involved – and communicate
- Focus on continuous improvement

6. Conclusion

As never before in history, businesses are evaluated by internal and external stakeholders, including employees, shareholders, investors, consumers, clients, the general public and also environmental groups. They all expect companies to conduct business operations that adhere to ethical practices throughout their various business activities, including their supply chains.

Customer pressure, the media, shareholder resolutions or other interest groups will reward companies who do so and can damage a business reputation if not. Due to the fact that the Caribbean tourism is a very competitive industry, hotel operators are well advised to develop programmes that are indeed taking into account the environmental, social and economic dimensions of their business operations.

Many of the smaller hotel operators in the Caribbean can take advantage of such trends. Due to their size, they can be quicker to react and faster to develop policies that are based on such sustainability principles, given the correct knowledge and tools. The Caribbean hotel sector, therefore, can approach carbon neutrality by taking advantage of its unique role within the travel supply chain through the following considerations.

As operators, hotels manage their facilities. Efficient facility management will keep operational costs under control and may lead to lower costs and GHG emissions. To be successful, it is important to share lessons learned from best practices. This includes educating hotel staff on carbon neutral initiatives and practical steps to reduce the carbon footprint. Such process will clarify and outline the GHG accounting and programme design principles that will guide the development of the programme[24].

As buyers of products and services, the Caribbean hotel sector can take advantage of their purchasing power by Implementing "green" procurement strategies. This will require suppliers to adhere and maintain a consistent 'cradle-to-cradle' supply chain and purchasing process which considers economic, ethical, social and environmental impacts for all contracts and purchases. Larger hotels will have more power to implement here, and or collectively the sector with NGO or government support can develop a *co-op* approach to procurement / purchasing.

As market makers and service providers, the hotel sector shapes and influences consumer awareness and demand. If applied to sustainable tourism activities, tourists will be drawn to those hotel operators that are leaders within this growing market segment. Most international travelers are arriving at the Caribbean destination by air and are looking for ways to mitigate their carbon footprint or travel with companies who are.

[24] http://pdf.wri.org/measuring-to-manage.pdf

Finally, it is imperative that **local governments** are involved, understand and are supportive of supporting sustainable tourism and GHG reductions from a policy standpoint. They are the connection between local communities and potential carbon programmes that may benefit a particular destination.

6.1.1 Lessons Learned

As stated in the introduction, this learning kit addresses the need of making carbon finance and offset programmes an integral component of tourism business in the Caribbean, resulting in increased awareness about climate change and competitive advantages as individual operators and as a destination. Trainers using it to educate small to medium accommodation providers should now be able to educate and raise awareness about the development and adoption of climate change resilient operations, in particular participation in carbon offsetting and carbon trading programmes. This includes a more concise understanding of climate change, its risks and its opportunities. Because it is geared toward small to medium hotel operators, trainers should ensure that they fully understand the interrelationships of climate change and tourism. It will also show how climate responsibility, carbon credits and participation in carbon offset programmes offer a number of benefits for business.

Participating hotel operators should now be able to determine measures they can take to develop more resilient business practices and adapt to the climate change while improving business operations including financial benefits. This includes steps they can take with regard to carbon

1. *Calculation,*
2. *Avoidance,*
3. *Reduction,*
4. *Substitution and*
5. *Offsetting*

Recipients of the course should also understand carbon offsetting, the role of carbon finance and what types of projects qualify for carbon offsets, as well as how to integrate carbon offsets into sustainable travel operations or to get involved in renewable energy projects directly. This includes funding mechanisms for providers and tourists themselves to directly support meaningful, local initiatives that link the travel experience with climate-friendly projects. Accommodation providers should also have a clear understanding of how to begin integrating carbon offset schemes into business operation, and how to integrate climate responsible operations into marketing and communications by developing and telling a compelling story that highlights responsible operations and their social and environmental benefits.

7. Glossary & Additional Resources

7.1.1 Glossary

Additionality

To avoid giving credits to projects that would have happened anyway, rules have been specified to ensure additionality of the project i.e. to ensure the project reduces emissions more than would have occurred in the absence of the project. A project is additional if its proponents can document that realistic alternative scenarios to the proposed project would be more economically attractive or that the project faces barriers that carbon finance helps it overcome.

'Business-as-usual' scenario

A description of what would most likely have occurred in the absence of a carbon offset project, also referred to as the 'baseline scenario'.

Carbon dioxide (CO2)

A naturally occurring gas and one of the most abundant greenhouse gases in the atmosphere. Carbon dioxide is also a by-product of industrial processes, burning fossil fuels and land use changes.

Carbon dioxide equivalent (CO2e)

The unit of measurement used to compare the relative climate impact of the different greenhouse gases. The CO2e quantity of any greenhouse gas is the amount of carbon dioxide that would produce the equivalent global warming potential.

Carbon footprint

A carbon footprint is the total set of greenhouse gas (GHG) emissions caused by an organization, event or product. For simplicity of reporting, it is often expressed in terms of the amount of carbon dioxide, or its equivalent of other GHGs, emitted.

Carbon neutral

Carbon neutrality, or having a net zero carbon footprint, refers to achieving net zero carbon emissions by balancing a measured amount of carbon released with an equivalent amount sequestered, avoided or offset.

Carbon offset

Carbon offsets are the 'currency' for offsetting. They are quantified in metric tonnes of CO2e reductions, i.e. one carbon offset equals one tonne of emissions reductions made through selected and verified carbon projects. Carbon offsets can be purchased on a voluntary basis or to meet regulatory requirements.

Carbon offset project

A third party verified project which utilizes proven clean technologies including wind and solar power to generate carbon offsets.

Carbon offset standard

A standard that helps to ensure that carbon offset projects meet certain quality requirements, such as additionality and third party verification. Several offset standards exist within the voluntary and compliance carbon markets and each has a different set of requirements depending on its focus and scope.

Certified emission reduction (CER)

Certified Emission Reduction – a carbon credit created by a Clean Development Mechanism (CDM) project. One CER corresponds to one tonne of CO2e emission reductions.

Climate change

A change in global climate attributed directly or indirectly to human activity and in addition to natural climate variability observed over comparable time periods.

Climate change adaptation

Refers to human interventions that are meant to prepare for or adjust to future climate change, real or potential

Climate change mitigation

Is a human intervention to reduce the sources or enhance the biological sinks – such as forests – that absorb greenhouse gases

Climate change resilience

Refers to a shift from “business as usual” to broad-based strategies for achieving an overall improved business operations, better preparedness and heightened awareness of climate change

Compliance carbon market

The segment of the carbon market for carbon offset transactions which meet regulatory requirements i.e. offsets purchased by governments and organisations to meet Kyoto targets.

Designated operational entity (DOE)

A DOE is an independent auditor accredited by the CDM Executive Board to validate project proposals or verify whether projects have achieved planned greenhouse gas emission reductions.

Double counting

When two or more individuals or organizations claim ownership of specific emission reductions or carbon offsets

Global warming

The increase in the average temperature of the Earth's surface as a result of the accumulation of greenhouse gases in the atmosphere

Global warming potential (GWP)

Global warming potential (GWP) is a measure of how much a given amount of greenhouse gas is estimated to contribute to global warming, relative to the same amount of carbon dioxide. See CO2e.

Greenhouse gas (GHG)

Greenhouse gases are gases in the atmosphere that absorb and emit infrared radiation. This process is the fundamental cause of the greenhouse gas effect. The main greenhouse gases are water vapor, carbon dioxide, methane, nitrous oxide and ozone.

Kyoto Protocol

An international protocol to the United Nations Framework Convention on Climate Change (UNFCCC), that requires industrialized country signatories to meet greenhouse gas emission reduction targets relative to their 1990 levels.

Leakage

When an emission reduction from a carbon offset project in one area causes an increase in emissions somewhere outside of the project scope i.e. where conserving a forest in one region shifts logging activity to another area of forest.

Permanence

An offset quality criteria which relates to the robustness and durability of the emission reduction generated by a carbon offset project.

Registry

A publicly accessible database that tracks ownership of carbon offsets over their lifetime.

Retire

To permanently remove carbon offsets from market to ensure that they are not re-sold. Offsets are usually retired by giving them individual serial numbers and placing them in an official registry.

Unique ownership

The concept of clear ownership rights to the emission reductions that a carbon offset represents, to avoid more than one individual or organisation claiming the benefit of the reduction. See double counting and retire.

Validation

An independent assessment of the carbon offset project design and baseline calculations by an accredited third-party auditor that takes place before the project activity is underway.

Verification

An independent assessment of quantification of actual emission reductions achieved by a carbon offset project, carried out by an accredited third-party auditor after the project is underway.

Verified emission reduction (VER)

Verified Emission Reductions (VER) – a carbon credit created by a project which has been verified outside of the Kyoto Protocol. One VER corresponds to one tonne of CO2e emission reductions.

Vintage

The corresponding year in which the emission reductions that a carbon offset represents were created.

Voluntary carbon market

The segment of the carbon market for carbon offset transactions outside of government-related regulatory schemes i.e. offsets purchased by organisations wishing to offset their carbon on a voluntary basis.

7.1.2 Carbon Market Resources

The following examples list companies and associations that can be contacted to receive further information on how carbon offsets can be accessed or developed. Some of the main players include:

- **Encyclopedia:** General questions regarding carbon offsets, markets, projects can be found among others on http://www.carboncreditsfaq.com/. This website provides more detailed and specific information, yet not all is free. Free information can be found on Wikipedia http://en.wikipedia.org/wiki/Carbon_offset others also include EcoSystem Market Place (http://www.ecosystemmarketplace.com/). EcoSystem Market Place publishes annual reports on voluntary carbon markets and provides free updates through newsletters etc.
- **Carbon calculators.** There are many carbon calculators out there in the marketplace. Most of them make us of the GHG protocol which was co-developed between the World Resources Institute (WRI) - http://www.wri.org/ and the World Business Council on Sustainable Development (WBSD) - http://www.wbcsd.org/home.aspx. Some of the calculators are offered

directly by retailers and others are more scientific. The David Suzuki foundation has great resources and information on GHG emissions, being carbon neutral and carbon offsets (http://www.davidsuzuki.org/what-you-can-do/reduce-your-carbon-footprint/go-carbon-neutral/). The US Environmental Protection Agency (EPA) has published a carbon calculator on their website (http://www.epa.gov/climatechange/ghgemissions/ind-calculator.html) as well as the University of Berkeley, California (http://coolclimate.berkeley.edu/). In addition the German organization Atmosfair (affiliated with the German Ministry of Environment) offers a carbon calculator (https://www.atmosfair.de/en/act-now/contribute-now-compact/). Important to note is that in order to calculate the correct/accurate amount of your GHG emissions, you should know for example what the energy mix of your electricity consumption is made of. Thus the higher the use of fossil fuels that is being used for electricity generation, the higher the related carbon footprint of consumption.

- **Carbon equivalency calculators.** Equivalency calculators allow you to equate amount of carbon offset, typically in *tonnes*, into more concreted terms that people can relate to, such as taking X amount of cars off of the road or planting Y amount of trees. The US Environmental Protection Agency website has a good one available: http://www.epa.gov/cleanenergy/energy-resources/calculator.html
- **Carbon offset retailers.** Retailers are specialized companies – some of them are non-profit, some of them for profit companies. Most retailers maintain a small inventory of carbon offsets and acquire additional carbon offsets based on their clients' demand. They usually provide additional consulting services, such as carbon footprint calculation and communication support. To name a few of the more relevant retailers a few are listed here:
  Myclimate (http://www.myclimate.org/), Sustainable Travel International (STI), www.sustainabletravel.com), The Carbon Neutral Company (http://www.carbonneutral.com/), Native Energy (http://www.nativeenergy.com/), Atmosfair (http://www.atmosfair.de/en/), Climate Care (http://www.climatecare.org/index.htm?redirected=true).
- **Brokers** (intermediaries) – brokers bring together buyers and sellers. Carbon markets are at this stage very fragmented and prices are not always easily discoverable. Brokers thereby provide evidence about prices and related project attractiveness. They are also providing transactional services. Some of the larger brokerage houses include Evolution Markets (http://www.evomarkets.com/), BGC (http://www.bgcebs.com/), TFS (http://www.tfsgreen.com/) and for example ICAP (http://www.icap.com/markets/commodities/energy/emissions.aspx). Brokers are typically paid a commission fee based on total value of transaction. They also provide a wide range of brokerage services ranging from energy to financial derivatives.
- **Project developers** – project developers are specialized companies, often with an engineering background, who design, build and operate projects that provide next to carbon offsets additional revenue streams such as water and energy. Some of the larger project developers include CAMCO (http://www.camcocleanenergy.com/globalhome.html), First Climate (http://www.firstclimate.com/), EcoSecurities (http://www.ecosecurities.com/) Forest Carbon

Offsets LLC (http://www.forestcarbonoffsets.net/capabilities/) and for example Climate Change Capital (http://www.climatechangecapital.com/home.aspx).

- **Financial institutions**, such as banks – including multilateral institutions (i.e. World Bank), the Inter-American Development Bank, the German international development agency "Gesellschaft fuer Internationale Zusammenarbeit (GIZ), USAID and others.
- **Industry associations** such as the International Carbon Reduction and Offset Alliance (http://www.icroa.org/) and the Climate Market and investors Association (http://www.cmia.net/). These industry associations deal with policy & market support and offer a platform for various market participants.
- **Registries,** such as APX (http://www.vcsregistry.com/) and MARKIT (http://www.markit.com/en/products/environmental/markit-environmental-registry.page). Registries provide information about registered carbon offset projects from around the world based on a number of standards such as Verified Carbon Standard, Gold Standard and others. If and when hotel operators are interested in learning more about projects, registries are a valuable resource to familiarize themselves with project locations, types and activities. The CDM (compliance carbon markets) registry can be found here: http://cdm.unfccc.int/Projects/projsearch.html when you use this website, you will also have access to information regarding the UNFCCC climate change policies and agreements as well as information related to international climate talks.

7.1.3 Energy & water savings programmes

In addition to the recommendations made in chapter 3, note that the Caribbean Alliance for Sustainable Tourism (CAST) has a number toolkits available that illustrate energy, water and other resource savings and actions to take advantage of (http://www.caribbeanhotelandtourism.com/CASTtoolkits.php).

7.1.4 Carbon offset project development description

Caribbean hotel operators can play different roles in the (voluntary and/or compliance) carbon market. They can be become project owners/developers or they can provide/access carbon offsets through an established carbon offset programme by contributing directly or offering a promoted project to their customers.

Unless they plan investing a significant amount of time and financial resources, contributing to an established carbon offset programme is the only realistic option. On the former, hotel operators should be aware of the general process of how the carbon offset supply chain works. The following overview vastly simplifies the process, it should, nevertheless, provide sufficient information to outline the various stages a carbon offset project has to go through. Additional information on "how to develop carbon offset projects" can be found on the following website, provided by the Verified Carbon Standard Association: http://v-c-s.org/develop-project.

Stage 1: Project concept

A number of hotel operators (project owner or beneficiary) might choose for example a small scale renewable energy project, such as a solar park that supplies renewable energy to a cluster of small to medium hotels. It is worth noting that the project developer is not necessarily the same as the project owner. The specific expertise that the project developer provides relates to the accreditation of any GHG emission reductions in the form of carbon offsets. Usually engineering firms with specific sector experience are hired to conduct all necessary work to guide the project through a standardized project development cycle. The challenge the hotel operators face at this stage is the access to capital that allows them to pay the project developer. Funding sources might be sought from international development institutions, governments and/or the private sector to develop the project.

Stage 2: Verification and certification

Let's say the project has received sufficient funding so that project developers are hired, the equipment was purchased and installed and investors are willing to take on the risk to pursuing the project. At this stage, the verification and quantification of GHG emission reductions can take place. Such process requires significant technical expertise and ongoing monitoring throughout the lifetime of the project. For this purpose third party verifiers conduct an analysis and write up reports that include a detailed project description. All carbon offsets have to adhere to a set of crucial quality criteria (as indicated in section 4.1). The interesting aspect is that local community benefits become an integral component of the project. As such, the solar park in our example might be the first of its kind in the region. Hotel operators, staff and the general public can learn from this project as a way to reduce fossil fuel usage, lowering energy costs and reducing environmental impacts as well as to increase capacity on a local level.

Stage 3: Commercialization of carbon offsets

Once the project' carbon offsets are verified in accordance with a particular set of certification standards (see below), it is common to say that the carbon offsets have been certified. Subsequently the project will be listed at any of the available registries. At this stage, carbon offsets are readily available for buyers. Middlemen/brokers often step in as to facilitate the trade. Other actors, such as carbon offset retailers, might also be interested in purchasing carbon offsets for their own project portfolio or on behalf of existing clients. The terms and conditions of the sale are being negotiated and a sales contract is signed between buyer and seller of the selected carbon offsets. Once ownership has changed hands, appropriate changes will be made publicly on the registry where the project is listed. As part of this process, purchased carbon offsets are being retired (they are taken off the market) and the registry or account holder will issue a retirement certificate. With this last step, GHG emissions that occurred somewhere else in the world were offset with carbon offsets from the solar park in our theoretical example.

7.1.5 The International Standard Organization (ISO)

ISO is the International Organization for Standardization. ISO has a membership of 163 national standards bodies from countries large and small, industrialized, developing and in transition, in all regions of the world. ISO's portfolio of over 19 000 standards provides business, government and society with practical tools for all three dimensions of sustainable development: economic, environmental and social. ISO has therefore developed technical assistance and training packages tailored to the variety of needs of its members[25]. ISO published an action plan for developing countries[26] that help stakeholders including small and medium enterprises to realize their potentials by participating in programmes that aim at providing guidance on good practices in standardization. These progammes increase awareness, knowledge and build capacity in focal areas, such as those that can be attributed to energy performance programmes. Barbados, Cuba, Jamaica, Panama, St. Lucia, Trinidad and Tobago, Dominica, Dominican Rep., Guyana, Suriname, Antigua & Barbuda & Saint Vincent and the Grenadines

7.1.6 The Caribbean Renewable Energy Development Programme (CREDP)

CREDP is financially supported by the German international development agency "Gesellschaft fuer Internationale Zusammenarbeit" (GIZ) in co-operation with CARICOM members with the objective "to reduce barriers to the increased use of renewable energy thus reducing the dependence on fossil fuels while contributing to the reduction of greenhouse gas emissions". Small to medium hotel operators should contact their local CARICOM representative to further engage and/or participate in this programme. Funding might be available for renewable energy projects that can be linked to tourism activities in the Caribbean. The programme supports renewable energy project development in Antigua, Bahamas, Barbados, Belize, Dominica, The Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St. Kitts, St. Lucia, St. Vincent, Suriname and Trinidad.[27]

[25] http://www.iso.org/iso/home/about/iso-and-developing-countries.htm
[26] http://www.iso.org/iso/iso_action_plan_developingcountries-2011-2015.pdf
[27] http://www.credp.org/