



A Basic Guide of Sustainable Practices for Small and Medium Enterprises

Sustainable Practices for SMEs

As climate change continues to threaten the planet, it is important to understand why we must combat it, and how business sustainability can positively contribute to that.

Climate change is a continuing issue the world is facing together. It is thus important to understand how, as a business, your company can impact the environment both negatively and positively. Not only will transitioning to more sustainable business practices make your company more environmentally friendly, but it will also improve marketability. Sustainability continues to be a marketable asset to different brands, as consumers continue to want more ethically sourced and eco-friendly products. Thus, sustainability can also grant a competitive edge to your business.

This guide was created in conjunction with a group of university students from Worcester Polytechnic Institute after a study of Costa Rican business sustainability was completed in February of 2023; it details seven areas where a business can become more sustainable, and was developed using data collected in surveys and interviews with different companies across the country. These solutions will provide simple avenues to positively impact the environment while still conducting a profitable business.

Additionally, we would like to thank the 13 interviewees who took time out of their days to educate us and answer our interview questions.

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LOGISTICS & OPERATIONS

Understanding the logistics and operations of current business practices is a fundamental first step in the transition to sustainability.

Before any sustainable action is taken, a comprehensive assessment of the state of the company should be completed. You need to get a strong understanding of the steps your company is able to take without going over budget. The following are the first logistical steps to take while looking to transition to sustainable practices:



Analyze Financial Status

It's crucial to get an economic and financial assessment to see if a company is profitable enough to undertake the initial investment into sustainable practices. The first step is to identify income, and expense situations to avoid spending beyond your means. While the initial cost is steep,

Figure 1: The three different sections within analyzing the business. All three sections are relevant to ensure the success of your company

sustainable practices eventually pay for themselves. The ROI tends to extend for a long period of time, but as Costa Rica begins to implement and enforce more Carbon Neutral goals & policies, sustainable businesses will already be prepared.

Internal Assessment of Resource Usage

An internal assessment of resource usage helps identify the next steps to minimize carbon footprint and environmental impact. This can range from tracking carbon emissions of each individual product to looking at what current activities are being done to avoid or reduce waste.

Employee Education

Education is crucial for promoting awareness of sustainability within organizations. It increases awareness of environmental and social issues while promoting responsible citizenship. Train employees internally on sustainable practices or seek outside training by qualified groups.

Unified Company Culture

Building a sustainable culture means integrating sustainability into everyday decisions. A sustainable business should encourage a culture that rewards individual initiatives, actions, and commitments to sustainability. Break down habits into small milestones so employees get a sense of accomplishment which could lead to greater motivation. Reward sustainability in your company.

Triple Bottom Line

The triple bottom line is a way to measure your businesses social, environmental and financial impacts of your organizations activities. This can be done by conducting surveys and interviews to measure social impacts, evaluating financial statements and tracking carbon emissions or product life cycle assessments. The results can then be used to make informed decisions regarding sustainability operations and to evaluate a businesses sustainability performance.

ENVIRONMENTAL INDICATORS

The first step in becoming more sustainable is to measure your environmental impact.

Once the company assessment is completed, the next step is to implement a system to measure environmental impact. This can be a spreadsheet that tracks environmental indicators. This section will go over the four leading environmental indicators; this system is not restricted to four indicators, but is instead a recommended starting point that can be expanded later:

Energy Recovery

Any method used in reducing the amount of energy overall in the company can be qualified as energy recovery. To track energy usage within the company, examine the energy usage report through your company's supplier and discuss possible ways to minimize single-use energies. As a long term goal, implement a yearly impact assessment in comparing these usage reports across all varieties of used energies. By measuring consumption in kilowatt-hours per unit (kWh/unit), you understand what products are the most energy intensive.

Water Consumption

Tracking water consumption can be seen through water usage statements provided by the supplier to eliminate areas that use excessive water. Identifying potential areas where water consumption is unnecessary or can be reduced will significantly impact the total water waste. Like electricity, measuring usage per unit or per kg is helpful in understanding what processes are the most wasteful in manufacturing. Using units like liter per kilogram (L/kg) of final product, or liter per unit (L/unit) of waste are helpful to understand waste.

Waste Products

Recovering waste products can be a rewarding process for the well-being of your company. Properly disposing of chemicals and storing hazardous materials safely makes the potential for dangerous waste slim. More information on proper waste disposal can be found in the Waste Section of this guide. The amount of waste should also be tracked in kilograms of waste per unit (kg/unit), or the ratio of kilograms of waste per kilogram of final product (kg/kg).

Recycling Percentage

Recycling is a crucial part of developing a sustainable business. Separate different items that can be recycled will aid your company in tracking recycling progress. Use the following formula to calculate your recycling percentage:

$$\frac{\text{Monthly Recycling Quantity}}{\text{Monthly Solid Waste Quantity}} = \text{Recycling Percentage}$$

ELECTRICITY

Managing electricity use effectively can help reduce the yearly cost of operations

In order to reduce the yearly cost of electricity, you can add technology that reduces electricity usage or generates electricity internally to reduce cost. The following are low-cost ideas to reduce electricity consumption in working spaces:

Natural Light Diffusers

Installing skylight diffusers in the ceiling of the workspace can help reduce electricity consumption during the day by utilizing natural sunlight. However, it needs to be paired with a non-natural system to compensate for lower light levels at different times of day.

LED Lights

Changing your traditional light bulbs for LEDs can help reduce electric costs since LEDs are more energy effective and last longer.

Motion Sensor Technology

Motion sensor devices can be a useful tool in any workspace to regulate electricity consumption by turning devices off when activity in a room is not detected. They can be used for lights and AC units to reduce unnecessary usage.

Solar Panels

Solar panels can help you save money on electricity internally. A basic solar panel system in Costa Rica can cost from \$7,000 to \$8,000. However, the yearly savings in electricity bills will eventually cover the initial investment. Depending on your system's size, it is possible to save from 30% up to 95% in electricity bills using solar panels.



Figure 2: Solar Panels Installed on a roof

Solar Water Heaters

A solar water heater can raise the initial temperature of the water before being used in manufacturing. These heaters put less load on a boiler, drawing less energy to get to the boiling point or necessary temperature for production.

WATER

Water conservation in businesses can lower costs, reduce environmental impact, and demonstrate corporate social responsibility.

Water is a vital resource used in various operations and processes. Installing water systems, like the ones listed below, can reduce your business's consumption, which can benefit your budget and the environment. The following section details different ideas for water conservation:

Water Efficient Appliances

There are many water-efficient fixtures and appliances on the market currently, with inexpensive options such as low-flow toilets, urinals, and faucet aerators. On a larger scale, businesses can invest in water-efficient equipment like high-efficiency boilers and cooling towers. If feasible, companies can replace existing valves with low-flow valves and fittings.



Water Collection Methods

Water collection methods are an effective measure to capture and conserve water. You can harvest rainwater from the roof through a gravity-fed system into a supply tank. Capture excess water that is produced by air conditioning units or dehumidifiers. Businesses can use this recycled or reclaimed water for non-potable purposes such as landscaping, cleaning, and other industrial processes.

Figure 3: This tank is a rainwater collection system.
It can be used in different manufacturing processes.

Water System Upkeep

Well-maintained systems operate more efficiently, using less water and energy to deliver the same level of service. Companies should conduct regular system checks to ensure water is not wasted by faulty equipment. Another option is to implement a leak detection and repair program.

WASTE

Companies will always produce some form of waste; by properly managing as much waste as possible, your company will become more sustainable.

Every company needs to focus on reducing their waste. Additionally, waste must either be properly disposed of or reused. The following are methods to dispose of or reuse waste:

Hazardous Waste Disposal

In order to dispose of hazardous waste, you must identify the type of hazardous waste that is being produced. Next, you must contact a waste management company to properly dispose of the hazardous materials. The following is a short list of types of hazardous waste:

- Batteries
- Used oils & lubricants
- Refrigerants
- Home appliances
- Medical appliances
- Chemical waste (inflammatory, corrosive, oxidizing)

Recycling center

Every company should try to recycle as much waste as possible. A company can either send their recyclable waste to a waste management company that will process and recycle the waste, or they can reuse their waste in their processes. If a company recycles

its own waste, it is key to have a recycling center or protocol in place. The waste needs to be sorted and cleaned before it is reused or repurposed.



Figure 4 : An example of how all recycled products can be sorted into different categories.

Composting

Composting is an easy and cost-effective process that SMEs can use in their sustainability processes. By composting, companies can repurpose their organic waste into compost that can be used by the employees or donated to local farmers and families. A medium size composter that holds 35 kilos of organic waste can cost from \$700 to \$800 in the Costa Rican market, a smaller option can go for \$200. It is important to follow the composting process properly in order to avoid issues.

SOCIAL IMPACT

The social aspect of sustainability is often neglected but is necessary for a healthy work environment.

As business owners and employees, engaging with the community around you is important. Social projects for the public good are necessary to maintain healthy relationships with the community and positively impact the environment. The following are low-cost ideas to engage with the public and improve the area around you:

Develop a Healthy Working Environment for Employees

To have a positive social impact on the community outside the business, you must ensure that things are running smoothly internally. Make sure your employees have a healthy and happy working environment where they are treated with respect.

Donate Old Equipment to Schools, Libraries, or Other Public Organizations

Old computers, monitors, and other office supplies don't need to be thrown away. They can instead be donated to others who need them.

Work with Schools, Universities, and Local Education Providers

Offer to give tours of your facility to students or to speak to students on-site to engage with the community and education in the area.

Volunteer for or Organize Environmental Cleanup Campaigns

Lead or participate in efforts to clean trash from beaches, forests, and city streets.

ENVIRONMENTAL IMPACT

Every company has an impact on the environment, and by becoming sustainable your company can positively aid the environment.

The environmental impact of a company can be divided into two types, direct and indirect. Direct impact is the result of the company's processes, and indirect impact comes from outside of the company, usually from other entities.

Carbon Offset

Carbon offsetting is a process in which companies invest in initiatives that can compensate for their own carbon emissions. This does not mean that the company's emissions are being reduced, but it means the company is compensating for its own emissions by financing projects that can benefit the environment. The UCC-FONAFIFO program by FONAFIFO manages carbon offsetting, and provides resources to reduce carbon footprints.

Environmental Certifications

Environmental certifications dictate a guideline for companies to follow that can facilitate the process of setting up an environmental management system. Some of the most common certifications in Costa Rica are the ISO 14001, the Certificación Carbono Neutral, and the Bandera Azul Ecológica. It is common for companies to hire a consultant specialized in certifications who can help the company take the necessary steps to become certified. Hiring a consultant can also reduce the time to get the certification, which can often be from six months to a year depending on the company's current sustainability structure.

Ethical Sourcing from Sustainable Supply Chains

Sourcing from sustainable supply chains is a form of indirect impact. Ethical sourcing requires businesses to ensure that products and raw materials are made by suppliers who adhere to environmental and social standards, such as fair labor practices and responsible resource management. These supply chains seek to minimize environmental impact during the entire lifespan of a product: Production, transportation and disposal.

References

Figure 1: Triple bottom line diagram

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Figure 2: Example of solar panel system

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Figure 3: Water collection system

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Figure 4: Example of sorting system

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