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Current trends in green technology and the Sustainable future.

By Akshay Kumar Pusthay

Chapter 1: Introduction

Humanity has been living under a growing environmental credit since since the Industrial Revolution. Natural resources are decreasing at an exponential pace, while wastes are piling up over the world at rates that are almost comparable to one another. It should come as no surprise that, beginning in the 1970s, there has been a growing uproar over the threat that human activities pose to the continued existence of humanity (Boye, 2013). Despite this, there are still doubts regarding how to approach things in a different way now. The implementation of mitigation measures may seem to be the obvious immediate answer; yet, in most cases, these efforts do little more than transfer the pollution from one location to another.

The most recent developments in Green Computing are moving in the direction of making more effective use of available resources (Sarwar, 2013). It is generally agreed that energy is the most important resource, and that carbon footprints are the most important environmental factor. As a result, the emphasis is placed on lowering the amount of energy consumption and carbon footprints while simultaneously raising the level of computing capability (Salama, n.d.).

The environment, which until recently was viewed as a limitless resource with no cost, is now perceived as a restricted and valuable resource that requires careful study. Therefore, greater emphasis should be placed on minimising environmental impacts and preventing environmental contamination. Today's food sector is highly efficient and provides consumers with a vast selection of fresh and processed foods of the highest quality. Nonetheless, each phase of the agriculture and food industrial system is characterised by by-products, waste, and air emissions with potential environmental impacts. Even though technology advances in food production have created new markets and opportunities, they must also address evolving environmental concerns. Conservation of resources, recycling and reuse of materials, exploitation of by-products and bioconversion of waste materials, as well as reduction of environmental loads, may all contribute to environmental sustainability. This awareness has highlighted the necessity for effective research to reduce the environmental impact of technology and processing methods (Kroyer, 1995).

Analysing Food Processing Technologies:

The visualization here shows a summary of some of the main global impacts:

- Food accounts for over a quarter (26%) of global greenhouse gas emissions.
- Half of the world's habitable (ice- and desert-free) land is used for agriculture.
- 70% of global freshwater withdrawals are used for agriculture.
- 78% of global ocean and freshwater eutrophication (the pollution of waterways with nutrient-rich pollutants) is caused by agriculture.

- 94% of mammal biomass (excluding humans) is livestock. This means livestock outweigh wild mammals by a factor of 15-to-1.4 Of the 28,000 species evaluated to be threatened with extinction on the IUCN Red List, agriculture and aquaculture is listed as a threat for 24,000 of them

Food, therefore, lies at the heart of trying to tackle climate change, reducing water stress, pollution, restoring lands back to forests or grasslands, and protecting the world's wildlife.

Food & Sustainability:

The food and beverages sector is worth \$7 trillion, and as concerns about sustainability have grown, so has the amount of pressure placed on the industry by investors, regulators, downstream purchasers, and consumers to not only improve its sustainability but also provide sufficient transparency to demonstrate the legitimacy of the efforts it is making in this area. Many businesses are already aware of the linkages, opportunities, and risks associated with climate change, and they have taken initiatives to improve their level of sustainability. However, according to an ENGIE Impact analysis of CDP reporting data, just 15% of food and beverage companies who report to CDP are now on track to meet the sustainability goals they have set for themselves. These businesses face a number of challenges that necessitate a transition toward more sustainable practises.

Transforming Food Production: Agriculture and related land-use practises, as well as animal production, are the key contributors to greenhouse gas emissions in the food and beverage value chain. According to the Carbon Disclosure Project's study *Fast Moving Consumers*, 56 percent of food and beverage industries have no Scope 3 emission reduction targets. Despite the fact that Scope 3 emissions account for 90% of total lifecycle emissions. To maintain the food system's resilience, it is vital to address the sources of these emissions, as well as other environmental and socioeconomic dangers. Gaining visibility in complex, worldwide, and frequently fragmented supply chains, as well as engaging suppliers in the path toward sustainability, will be critical steps in increasing influence within the sector.

Reducing Resource Intensity: In the food and beverage industry, energy and water consumption are substantial expenses. Identifying and implementing opportunities to increase resource use is vital. This approach must begin with data analysis to gain visibility into the intensity of resource consumption as well as the energy, water, and waste sources. Due to the strong relationship between water and energy in this sector of the economy, implementing measures to reduce water consumption can also lower the energy intensity necessary for heating or cooling water.

Meeting Evolving Consumer Expectations: Businesses in this consumer-driven sector will need to continue to adapt to altering client expectations in order to maintain their position as market leaders in the future. Consumers expect convenience, sustainability, ethical and transparent sourcing, and value from the food they buy, but they also want more.

Successful firms will increasingly rely on their capacity to demonstrate that they are assisting their customers in living according to their environmental and ethical standards.

Green Entrepreneurship: Buying and selling products and services to generate a profit constitutes the core activities of a business (i.e., having an income or revenue that is greater than costs). Every company must be able to support itself financially. Without meeting this essential prerequisite, they will be unable to maintain their own existence, pay their employees, and continue to produce goods or provide services for the market (Jones, 2018).

Entrepreneurship in a Sustainable Field For the notion to be effective, businesses need to begin implementing the new model that will assist them in both promoting environmentally conscious projects and greening their own operations. This may take a longer amount of time to do for more established businesses because they already have a particular method of operation (team, 2015). Changes to the fundamentals will be required, but most firms do not have the financial resources to make these adjustments. However, even if we are discussing a brand-new business initiative, the finance will still be the single most significant factor. The necessary assistance will be provided to environmentally conscious businesspeople in Europe starting today and continuing into the ensuing years, The issue of sustainability is taken very seriously inside the European Union, and efforts are being made to find environmentally friendly solutions to a variety of issues. Because of initiatives such as the European Green Deal, we are now able to observe that a growing portion of the budget is being allotted to programmes that promote actions that are kind to the environment. This has resulted in a series of "investments that will help both create new green enterprises as well as change current policies for old businesses" (switchtogreen, 2021).

Social Entrepreneur

General terms, a green business is one whose fundamental business model addresses an environmental or social issue, such as improving energy or resource efficiency, reducing greenhouse gas emissions, reducing waste or pollution, protecting or restoring ecosystems, promoting local culture, or supporting communities. These types of concerns include improving energy or resource efficiency; lowering greenhouse gas emissions; reducing waste or pollution; conserving or restoring ecosystems; and reducing waste or pollution.

The following are activities that are common among green businesses:

- Integrate sustainability concepts into its business decisions and actively monitor them.
- Ensure that employees can keep a healthy work-life balance by paying them a fair price for their labour and ensuring them to do.
- Achieve an equitable level of benefit distribution throughout the value chain.
- Maximize the business's social benefits (e.g., by employing marginalised groups). Some companies establishing foundations to aid in this endeavour is commendable, but a sustainable business does not limit its social activities.

- It is not limited to monetary contributions to charitable organisations; rather, it seeks out every opportunity to increase the social benefits provided by a company's daily operations.
- Offer eco-friendly and/or regional products and services that displace the demand for non-green options.
- Contribute to the long-term viability of its neighbourhood (e.g., by reducing energy or water consumption, or by reducing waste)
- Make an attempt to reduce resource use (energy, water, and materials) and replenish, enhance, or replace a company-utilized environmental resource (e.g., replanting trees, enhancing soil fertility, utilising recycled materials).
- Make a long-term commitment to adhering to environmental standards in the way it conducts its company.

Motivation area of an interest:

After completing my bachelor's degree in India in 2017, I interned at tourism and media companies with the goal of becoming a documentary film director. I've always had a passion for exploring new places and nature, which has only increased since I was a child. As part of my internship, I travelled to numerous tropical regions and witnessed a variety of subcontinental climates. Later in my career, I became the social media & public relations manager for BABUL Film Society, a non-profit organisation that raises awareness about Environment, Sustainability, and biodiversity through social media and film. Early on in my involvement with Babul, I felt uneasy and even considered leaving the organisation. However, as I immersed myself in my work and interacted with many schoolchildren and inquired about their knowledge of sustainability and biodiversity, I was astonished to learn the truth about the environment (Bhavani, 2019). Gangadhar Panday, the founder and president of the Babul film society, took voluntary retirement after working as a superintendent at Central customs and Exercise of India. His passion and desire to heal the environment and educate future generations for better lives led him to this decision. After completing more than fifteen to twenty eco-shoots, my attitude towards nature shifted drastically; I learned how smallest things can have a lasting impact on the environment. Significantly the food industry and food distributary industries had impacted the nature throughout the years, I would like to take opportunity use my MBA dissertation to address the Current trends impact caused by Food Industry and sustainable future.

Chapter 2: Literature Review

Several studies have analysed the factors influencing the Sustainable Future.

1. To Identify and analyze the current technology and process used in food & beverages business.
2. To Determine the Impact of E-waste and adapting the alternative solution for future sustainability.

3. To determine the damage caused to environment with food & beverages industry.
4. Recommendations for Technology of Future Sustainability and Green entrepreneurship.

Research Trends in F&B industry

Pay more for sustainable Beverages ii) Sustainable packaging, iii) Sustainable production & fair trade and iv) Influence of Sustainable beverages

Sustainable Beverages:

Most of the studies that have been conducted up to this point have focused primarily on examining consumers' intentions about their willingness to pay (WTP) premiums for organic products. Considering this, the findings of a recent analysis of the research that has been conducted on the subject indicate that more research needs to be conducted in a genuine market scenario utilising, for instance, home panel data (Isabel Schäufole, 2017). This is significant for research on environmental problems since it is well known that consumers' intentions to buy environmentally friendly items are not always matched by their actual purchasing habits. This discrepancy is referred to as the "green gap" (Martin Grimmer, 2016). When it comes to the qualities of sustainable products, the literature has focused on production as a crucial component, which is a factor that influences the decisions that customers make when making environmentally conscious purchases. As a result, there has been a significant amount of study conducted in recent years on customer preferences and WTP for organic wine (Mann, 2012); organic milk (Helene Hill, 2002); organic beer (Poelmans & Rousseau, 2017) and organic juice. Critically, it appears that there is still some uncertainty among consumers with regard to the term "organic," and in some instances, they believe organic products to not be ecologically friendly. This is a problem because consumers should know better (Prothero, 2019).

The majority of customers primarily connect "organic" with not containing any chemicals, and they are not knowledgeable about the requirements or procedures of organic farming. As a result, it should not come as a surprise that consumers' concerns about their own health have been demonstrated to be a more crucial driver for their purchase of organic food and beverages than their worries about the state of the environment (Helene Hill, 2002).

Eco Packaging:

Certain types of beverages, such as juice, water, and beer, have a vested interest in the packaging business because they are the leading contributors of the beverage category to the overall packaging percentage (Jorgelina Pasqualino, 2012). However, to the best of our knowledge, there has been no research on the importance of packaging as a determinant in ecologically responsible beverage purchase decisions (Van Birgelen, 2009). The usage of packaging in commodity products goes beyond its practical role (such as preserving the quality and freshness of the product), which is why it is important for consumers to have

options. In point of fact, consumers take into consideration not only the product's name and description, but also its appearance and how easy it is to open and close the box (Lynsey Hollywood, 2014).