Journal of Advanced Research in Polymer and Textile Engineering
Volume 1, Issue 1 - 2020, Pg. No. 30-34
Peer Reviewed Journal

Article

Sustainability - The Significant to Saving the Future

Janice Fernandes[1], Taneisha Fernandes[2]

[1,2]Research Scholar, MCA, Thakur Institute of Management Studies, Career Development & Research (TIMSCDR) Mumbai, India.

I N F O

Corresponding Author:
Janice Fernandes, Thakur Institute of Management Studies, Career Development & Research (TIMSCDR) Mumbai, India.
E-mail Id:
fernandesjanice96@gmail.com
Orcid Id:

How to cite this article:
Fernandes J, Fernandes T. Sustainability - The Significant to Saving the Future. *J Adv Res Poly Text Engi* 2020; 1(1): 30-34.

Date of Submission: 2020-05-03
Date of Acceptance: 2020-05-26

A B S T R A C T

his paper discusses sustainability and how it could be accomplished. The pillars of sustainability are explained with significance on environmental sustainability. A survey to gauge the extent to which the general public is adhering to environmental sustainability is discussed. The summary of the response to the survey is also discussed so that sustainability is practiced at a personal level. A solution using ICT is proposed.

Keywords: Sustainability, Environmental Sustainability, Sustainable Agriculture, Sustainable Forestry, ICT

Introduction

Sustainability can be defined as the ability to exist persistently. It focuses on sufficing the needs of the current generation keeping in mind the needs of the future generations. Sustainability stands on 3 strong pillars: Economic, Environmental & Social. It focuses on 3 P's: Profit, People & Planet.

Economic sustainability encompasses costs and benefits i.e. Profits. It refers to practicing activities that support long-term economic growth without causing damage to the social/ cultural and environmental aspects of the community. One easy activity to achieve Economic Sustainability is to commit to shop at local businesses. In the business world, economic sustainability gets most importance.

Social sustainability is a procedure for generating sustainable, positive dwellings that indorse happiness, by understanding what person's essential from the residences they live and work. Social sustainability act topics include human rights, fair labor practices, living conditions, health, safety, wellness, variety, evenhandedness, work-life balance, empowerment, community appointment, philanthropy, volunteerism, etc. It covers the 2nd P i.e. People.

This paper mainly focuses on Environmental Sustainability

i.e. on how to save our Planet and its resources for future generations.

What is Environmental Sustainability

To understand Environmental Sustainability, let us consider the following scenario.

Let's say that Johnny wants to pluck and eat mangoes from his tree. He has 2 options to do so. He can either climb a ladder or pluck some mangoes or he could take an axe and cut down the whole tree.

Johnny thinks it is better to go with the second option as in this way he would be able to get all the mangoes down from the tree. Johnny thinks that his decision is very wise, but we see a problem here.

While Johnny has plenty of mangoes now, he will not have any next year because there will be no tree to produce mangoes. In other words, Johnny did not sustain his natural resource and it will no longer be available to him. By chopping down the tree, Johnny overlooked the importance of environmental sustainability.

From the above instance we understand that Environmental Sustainability is "responsible interaction with the environment to avoid depletion or degradation of natural resources and allow for long-term environmental quality". In simpler words it means that practicing environmental sustainability ensures meeting the needs of today's population without jeopardizing the ability of future generations to meet their needs.

Our natural environment possesses the ability to rejuvenate itself and sustain its viability. When a tree falls naturally, it decomposes and adds nutrients into the soil, creating it sustain suitable conditions for future plants to grow.

Similarly, when nature is left alone, it has the ability to take care of himself. It is only when man enters the frame and meddles with the natural resources, things start changing. Most of the human activities deplete natural resources. Without application of environmental sustainability methods, long-term viability can be compromised.

Environmental Sustainability Application

The 2 widely used methods to achieve environmental sustainability are: Sustainable Agriculture and Sustainable Forestry.

Sustainable Agriculture

Sustainable Agriculture is defined as the use of agriculture (farming) techniques that protect the environment.

For decades, food has been formed through Industrial Agriculture - a system in which large farms grow the same crops year after year, using chemical pesticides and fertilizers that damage soils, water, air and climate. This system is not designed to last as it deteriorates the natural resources that it depends on.

But in new times, a mounting amount of innovative farmers and agricultural scientists are affecting near an agricultural system that is more environmentally maintainable. This system consists of farms of all sizes, yield a variety of foods, fibres, and fuels adapted to local circumstances and regional markets. It uses modern, state-of-the-art, science-based practices that maximize productivity and profit while minimizing environmental damage.

In repetition, sustainable agriculture is a complex idea with many dimensions including economic and social sustainability along with environmental sustainability because a sustainable farm should be a profitable business that contributes to a robust economy and it should have a beneficial relationship with the surrounding community.

Several key sustainable farming practices have arose ended periods of science and technology, some of which are:

- Rotating crops and embracing biodiversity
- Planting cover crops (like clover or hairy vetch)
- Reducing or eliminating tillage (traditional ploughing)
- Relating Integrated Pest Management (IPM)
- Integrating livestock and crops
- Managing whole systems and landscapes
- Adopting agroforestry practices

Sustainable Forestry

Sustainable Forestry is another application of environmental sustainability. It is the practice of adaptable forest resources so as to fulfil the needs of society and industry without compromising on the forest's health.

Forests are very important for the environment and also to local and national economies. We would not live on this planet without forests as they yield the oxygen we necessitate and engross the carbon dioxide from the atmosphere.

Notwithstanding forests do aimed at us; they are continually being forewent to unsustainable human ingesting. All time we lose 13 million hectares of forests. Our demands are growing at a rate where our consumption levels cannot be sustained. As long as humans live on this planet, there is always going to be a demand for forest resources like wood, pulp, etc. There is business that endeavour to meet these demands and there are people working in forests who need to feed their families. The only way to conserve forests is by applying sustainable forestry practices that the Rainforest Alliance (1987) has led.

It is difficult to think of forestry being sustainable as some of its practices like logging need trees being cut down. However, the solution to the problem is "balance". The entire concept of sustainable forestry, from a morally environmental outlook, is the extent to which the needs of the environment, wildlife, and forest communities are balanced.

There a number of applied methods that a community or business can proceeds to defend the health and permanency of a forest though motionless making. Some of the approaches are:

- Inaugurate protected areas and protect biodiversity
- Avoid forest conversion and keep high conservation value forests
- Consume a management plan and harvest therefore
- Tree estates have a role to play
- Usage reduced-impact logging methods
- Train those employed in forests and teach them around sustainable forestry.

Environmental Sustainability at A Personal Level

The above 2 methods are more practical from a business or occupational point of view. But what can we do at a personal level?

At a personal level, we need to ensure that our day to day interactions with the environment and its resources are sustainable. This includes the food we eat, the water we drink/use, the fuel we use, the electricity we consume, etc. All this can be summed up to practicing Sustainability in our Households.

In India, there are no strict laws that restrict the use of electricity or some natural resources like water in households. Consequently, it is totally on a person's consciousness about environmental sustainability and his efforts towards achieving the same.

Households play a crucial role in making major contributions to sustainable development by adopting "green" practices. Green practices are those that have a substantial influence on the overall energy consumption.

We take into account 3 household functions: Shelter, Food and Work/Play.

Shelter- This function covers the amount of energy consumed to keep oneself warm (heater used in cold regions) or cool (AC/Fans used in warm regions) and lighting.

Food- This function contains the agricultural produce that we buy like cereals, pulses, fruits and vegetables. It also includes the fuel we use to cook these foods. The most important resource here is water that is used for drinking or other purposes.

Work/Play- This function includes the amount of electricity/energy consumed in the devices that are used for work or play like Laptops, PCs, TV, Mobile Phones, etc. Even the vehicles (2 or 4-wheeler) that are used for commuting are included.

Thanks to urbanization, around 80% of the world's population has electricity access. India is the world's 3rd largest producer and consumer of electricity. The electricity ingesting in Indian homes has tripled since 2000. In 2014, an electrified Indian household consumed 90 kWh of electricity per month on an average which is sufficient to run tube-lights, fans, a small refrigerator and other small kitchen applications. However today electricity is used with many other electronic devices which results in much more electricity being consumed. With the demand of more electricity, the environment undergoes degradation thereby it unsustainable.

Besides electricity, there is demand for food supplies. For meeting the food demands of the growing population, fast but bad farming techniques are used. This in turn degrades the soil and hinders achieving sustainability.

The fuel used in vehicles are obtained using fossil fuels which are being consumed at an ever-growing rate. Fossil fuels take millions of years to be formed but the increase in consumption are deleting fossil fuel reserves

Challenges

Altogether humanoid actions devise a negative influence on the Earth. We ingest additional capitals than the Planet can offer. To meet the cumulative request of raw materials, we damage the ecosystems with intensive and polluting practices.

The confrontation the Earth's problems, all men and women have to obligate themselves to defend the world natural heritage. Cognizant societies would use expertise, innovations and cooperation to transformation the advance trend towards a sustainable growth deferential of the environment. Few of the encounters are deliberated underneath:

- 17th June was declared as World Day to Combat Desertification by the UN to indorse public awareness on climate change concluded certain performs to contain soil drying up. Desertification can be undertook by selecting food goods from sustainable agriculture, i.e. from those areas of the world where the land is not cultivated intensively or with one-crop systems, which are harmful to the soil, aquifers and can cause deforestation. Being aware of the environmental impact of the food we eat and reading food labels is necessary to fight the spread of environmentally damaging practices every day.
- One-third of all food produced worldwide is wasted: a part is lost during the processing; a part is thrown away by consumers. 1.3 billion tonnes of comestible food is misused yearly. It is essential to accept a sustainable existence, deferential of the resources the Planet stretches us in order to face poverty and food insecurity. Buying the appropriate amount of food products for the family members, using leftovers to prepare new meals, choosing supermarkets that donate the food about to go bad are a few solutions to the problematic. France selected to gratify supermarkets to contribute the food nearby to go bad to non-profit administrations.
- To defend biodiversity, it is significant to see that there are thousands of plant species that can be cultivated in a sustainable way. Regarding biodiversity also revenues choosing and recognizing seasonal fruits and vegetables. Because interpretation up on food properties, on the method in which they were formed and manufacture sure that they are all from a short supply chain is so important. Another way to protect

biodiversity is getting to know and support national parks and reserves.

Survey

A survey of 15 homes was done to find out what they do with leftover food:

Q1) How many people live in your home? Q2) Are you aware of sustainable living?

Q3) Do you know how much energy you use and if you could professionally reduce it?

Q4) What are the barriers you face in choosing more sustainable options?

Q5) Do you recycle waste? What other measures do you take to reduce waste?

Q6) What is the source of water in your house? Q7) Is the water used efficiently?

Q8) How do you commute? Is it a sustainable way of commute?

Q9) Have you implemented any measures to reduce pollution and be more environmentally friendly?

Q10) Are you aware of the term 'Carbon Footprint'?

Result

- About 90% homes said that there are maximum 4-6 people living in 1 house.
- 63% of the people were aware of sustainable living.
- A massive 84% feel that they can reduce their energy use. 60% think that changing behavior is critical and this includes turning off lights and unplugging appliances when not in use.
- For 38% of this collection the great cost of sustainable food, household foods and energy answers are a barrier to selecting these choices. 27% say they lack the motivation to change behavior or to stretch up the relaxations of current lifestyles. Additional barricades are lack of time to be more sustainable (22%), the limitations of local options for recycling or public transport (20%) and the constraints of living in an old property (14%). 23% the lack of knowledge of sustainable solutions.
- Recycling and plummeting left-over are strong priorities for this group. 37% of respondents recycle mainly through their local council schemes and some through charity shops. 31% decrease food waste by buying less, preparation meals in advance, cooking from fresh and using leftovers.
- 73% of the people said their source of water is through the municipal water line, whereas 27% said that they get water from wells / borewells.
- 70% of respondents believe they can reduce their water use. Only 3% specifically mention water meters, so it is likely that most respondents are unaware of how much water they use. 16% say they are not taking any action to reduce their water use.
- 67% of respondents say they don't think they can commute in a more sustainable way.
- Respondents are very conscious about making their gardens attractive to wildlife. 34% say they have created wild areas, or log piles, or planted trees and shrubs that are attractive to birds, bees and butterflies. 27% have bird feeders, bird boxes or bird tables in their gardens and a few are taking steps to maintain bio-diverse and pesticide-free gardens.
- Only 38% of the people were aware of the term 'Carbon Footprint', but admitted to never have calculated their footprint.

Proposition

Sustainability can begin on a smaller scale from individuals and their homes.

Solutions through Behavior

Average computer users can employ the subsequent tactics to make their computing usage greener:

- Use the hibernate or sleep mode when away from a computer for extended periods
- Buy energy-efficient notebook computers, instead of desktop computers
- Activate the power management features for controlling energy consumption
- Make proper arrangements for safe electronic waste disposal
- Turn off computers at the end of each day Refill printer cartridges, rather than buying new ones Instead of purchasing a new computer, try refurbishing an existing device

Cutting electricity bill and moving towards carbon neutrality by generating our own power using Solar Cells or Wind turbines.

Old computers and electronic stuff will not hurt us if they are disposed properly and can further be a great source of secondary raw material. Improper disposal would generate sources of toxins and carcinogens. There however does not exist a legal process for disposal of electronics in India. Even though electronic waste accounts for 70% of overall toxic waste.

Solutions through ICTs

It is observed from the survey that there are many people among the respondents who are looking for ways to live a more sustainably towards themselves as well as the environment. However, a vast majority of the Indian population is unaware of the simple steps they could take that could make a difference. The problem is that how do we reach these people and make them more aware.

In this age of digitalization, every person owns a smart phone or at least one person in a house does. This is how we can make people aware and help them live more sustainably.

The role of ICT here is first, to bring awareness among people about this notion. The more widely this idea is implemented, the better will it do in reducing wastage of resources and leading people to live sustainable lives – the key to saving the future.

Secondly, how would one know about the current consumption of power, water, etc.? For this, an application may be designed that has inbuilt calculators that will calculate the power consumption depending on the appliance and number of hours it is used. It will also suggest alternative power saving and energy efficient appliances if applicable along with the power consumption difference if the alternative is adopted.

In order to make it more attractive there can also be a money saver calculator to show how much money can be saved while using the alternative.

For the ones who are very environmentally conscious, a Carbon Footprint tracker may be included. Many of our daily activities such as using electricity, driving a car, or disposing of waste cause greenhouse gas emissions. Together these emissions make up a household's carbon footprint. The calculator estimates your footprint in three areas: home energy, transportation and waste.

Apart from the calculators, informative pages on the topics of clean energy, zero waste household operation, recycling, various alternatives to old practices, etc. can be included as quite a few people among the respondents wanted to adopt sustainability but did not know how to.

Another low-cost option is the Kill A Watt. A device that allows you to plug an appliance directly into the device. It shows how much power the appliance is using. You can cut down on costs and find out what appliances are actually worth keeping plugged in. Simply connect these appliances to the Kill A Watt, and it will assess how efficient they really are. You can calculate your electrical expenses by the day, week, month, even an entire year. Also check the quality of your power by monitoring Voltage, Line Frequency, and Power Factor.

Conclusion

The pursuit of global environmental sustainability i.e. avoidance of the reduction of natural resources in order to maintain an ecological balance is the need of the hour. The concept of sustainability has proven to help to a great extent and is the possible key to a successful future of the deteriorating world. Starting at an individual level can be a more feasible step for a widespread impact.

References

- www.academia.edu
- www.gktoday.in
- www.sciencedirect.com
- www.wikipedia.com
- www.environmentalscience.org
- www.activesustainability.com