Sustainable Future through Social Awareness, Strong Leadership and Technological Innovation

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ABSTRACT

In the last few years there has been an increasing focus on ‘sustainability’, as growing number of people are interested in what this means to them, to others around them, and to future generations to come. This paper focuses on basic understanding of words like sustain, sustainability, sustainable development, and also deals with factors that affect sustainability. Moving towards our goals of sustainability, it requires fundamental changes in human attitudes and behavior, and hence very important to educate and increase public awareness of people around us.

Keywords— Sustain, Sustainability, Development, Innovation, Pillars of sustainability, Sustainability solutions

I. INTRODUCTION

What is Sustainability? The root word of “sustainability” is the word, “sustain” or “to keep something going.” The definition of sustainability is the study of how natural systems function, remain diverse and produce everything it needs for the ecology to remain in balance. Sustainability takes into account how we might live in harmony with the natural world around us, protecting it from damage and destruction.

II. PRIOR APPROACHES

Two decades ago the Brundtland Commission by the UN in a report called “Our Common Future” – addressed the links between development and environment, and challenged policy-makers to consider the interrelationships among environment, economic and social issues when it comes to solving global problems. The report examined emerging global challenges in population and human resources, food security, species and ecosystems, energy, industry and urbanization, and concluded – “Sustainable development is development that meets the needs of the present, without compromising the ability of future generations to meet their own needs”. Basically, sustainability is about our kids and grandkids and ensuring that they can live a healthy and viable life.

III. DEVELOPMENT & SUSTAINABILITY

Now embedded in the definition of sustainable development is the word ‘development’. ‘What is development?’ - Development is the process of furthering people’s well-being. Good development includes: (a) increasing the asset base and its productivity (b) empowering poor people and marginalized communities (c) reducing and managing risks (d) taking a long-term perspective with regard to intra-and intergenerational equity.

“The ‘environment’ is where we live; and development is what we all do in attempting to improve our lot within that abode. The two are inseparable.” – Our Common Future.

Within the field of sustainability, it is important to look at the difference between growth and development. As the famous environmentalist Edward Abbey said “Growth for growth’s sake is the ideology of the cancer cell”. So, within this field when we look at how the countries are developing we look at more than just GDP (Gross Domestic Profit).
However, sustainability is more than the environment. Sustainability is balancing those different needs – integration of Economy, Ecology and Equity. Those are also known as ‘Three Es’, three pillars of sustainability or sometimes they are also referred to as the ‘Three Ps’: People, Planet and Profit. There are sometimes tensions between these three areas or tradeoffs. However, most of the times we can find a place in the middle where we are satisfying to the best of ability all of these different needs and concerns. The real key to sustainability is understanding how these are linked together.

IV. HOMO SAPIENS & OTHER SPECIES

So much of this field of sustainability is about changing how we approach problems, changing how we think, and recognizing indeed understanding we are all on the same planet. Note the fate of ourselves and other species on earth. We are all intertwined and that is very much what sustainability is all about.

How did we get into this mess? There are all these different drivers of change and pressure – population, economic growth, urbanization, globalization, trade, energy, technological innovation, etc. Paul Ehrlich has defined the impact of humanity on the environment and the demands that people place of the resources available on the planet with his famous equation:

\[ \text{Environment Impact (I) = Population(P) x Affluence(A) x Technology(T)}. \]

Basically, the more people we have, the richer they become, and more technology they use, the greater is the environmental impact. For much of human history, this is true. This defines the limits of sustainability.

The two most important conclusions derived from this relationship are that:

- the Earth can support only a limited number of people in a sustainable manner; and
- Humanity has a clear choice: between more people with poorer lifestyles and fewer people with a better quality of life.

In short, it can be said that there are ways to take the Technology and put it in the denominator. Are there ways enough to change that equation? Yes, there are ways to use human invention to reverse and even improve some of the environmental impact. This is why sustainability is the now the key driver of innovation.

We find that although this is sometimes true, the root causes of many problems we are facing are much more complex. People talk about ecological overshoot – there is a problem we are consuming more resources than the replacement rate. Is this problem really a physical one? - meaning we don’t have enough resources, or a political, social and economic problem.

Example: food – per UN we have enough food to feed everyone on this planet. However, millions of people today die of hunger. The principal problem is actually we don’t have sufficient land to grow, or sufficient money to purchase food. UN FAO chief says “if people go hungry today it is not because the world is not producing enough food, but because it is not produced in countries where 70 percent of the world’s poor live and whose livelihood depends on farming activities”. It is not lack of resources clearly, so how to overcome this barrier?

Example: energy resources–we talk about renewable vs. non-renewable energy resources. Non-renewable energy resources link coal, oil, gas, nuclear will actually run out. Coal, oil, and gas are different sources of fossil fuel, come from compressed ancient materials underneath the earth. Renewable energy resources like solar, wind, and biomass are not limited in that way and can be renewed. It is unbelievable that Thomas Edison in 1931 quoted –“I’d put my money on sun and solar energy. What a source of power! I hope we don’t have to wait for oil and coal to run out before we tackle that.” So, you would think with the information we had since in 1931 we would have moved to solar and wind based economy by now. However today we only use 13% of renewable energy. Why is this – It is not lack of resources, so how to overcome this barrier?

Example: Fresh Water - Clean water is essential for life. Most people in the developed world don't think much about the water they use for drinking, for food preparation, and for sanitation. In developing countries, however, the search for safe drinking water can be a daily crisis. Millions of people, most of them being children, die each year from largely preventable diseases caused by a lack of access to clean and fresh water and proper sanitation. Fresh water is another natural resource that is rapidly depleting. In our day-to-day life, we can make...
simple changes to sustain this natural resource. Few examples include installing water-efficient shower heads and toilets, controlling the amount of water we use in our gardens, and making each of us educate not to let the tap water run while not required.

Example: **Forest Management** - Logging is another industry that has dramatically changed over the last fifteen years, with the best companies now working with renewable forests and replacing every tree logged with new plantations to ensure they follow environmentally responsible practices. Sustainable Forest Management (SFM) has to keep the balance between three main pillars of sustainability we talked about: ecological, economic and socio-cultural.

V. **CONCLUSION**

What do we think are the solutions to these problems?: Solutions exist in Policy and Law realm, in Business strategy, Technology and Design, Values and Behavior change. Fig. 2 below shows adopted set of goals set by all UN countries to end poverty, protect the planet, and ensure prosperity for all as part of a new sustainable development agenda. Each goal has specific targets to be achieved over the next 15 years i.e. by 2030. For the goals to be reached, everyone needs to do their part: governments, the private sector, civil society and people like us.

![Figure 2: Sustainable Development Goals published by UN. September 2015.](image)

Let me end this paper with a message *(Ref. 3)*:

"Sustainability is something everyone can work towards... whether it is picking up garbage you see on the street or boycotting a company that practices environmentally harmful business methods, we all can make a difference."

**REFERENCES**

[6] https://www.sustain.ucla.edu